

Brill's Companion to the Reception of Galen

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Brill's Companion to the Reception of Galen

Edited by

Petros Bouras-Vallianatos
Barbara Zipser



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In memoriam

Piero Tassinari



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Petros Bouras-Vallianatos

Barbara Zipser

July 2018

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Latin Abbreviations of Titles of Galenic Works¹

Abbreviation	Latin Title	English Title
AA	<i>De Anatomicis Administrationibus</i>	<i>On Anatomical Procedures</i>
Adv. Lyc.	<i>Adversus Lycum</i>	<i>Against Lycus</i>
Aff. Pecc. Dig.	<i>De Propriorum Animi Cuiuslibet Affectuum Dignotione et Curatione</i>	<i>On the Diagnosis and Treatment of the Affections and Errors of the Soul</i>
Alim. Fac.	<i>De Alimentorum Facultatibus</i>	<i>On the Capacities of Foodstuffs</i>
Anat. Mort.	<i>De Anatomia Mortuorum</i>	<i>On the Anatomy of Corpses</i>
Ant.	<i>De Antidotis</i>	<i>On Antidotes</i>
Ars Med.	<i>Ars Medica</i>	<i>Art of Medicine</i>
At. Bil.	<i>De Atra Bile</i>	<i>On Black Bile</i>
Bon. Hab.	<i>De Bono Habitu</i>	<i>On Good Condition</i>
Bon. Mal. Suc.	<i>De Bonis Malisque Sucis</i>	<i>On Good Humour and Bad Humour</i>
CAM	<i>De Constitutione Artis Medicae</i>	<i>On the Composition of the Art of Medicine</i>
[Cath. Med. Purg.]	<i>Quos, Quibus Catharticis Medicamentis et Quando Purgare Oporteat</i>	<i>Whom to Purge, with which Cleansing Drugs, and when</i>
Caus. Cont.	<i>De Causis Continentibus</i>	<i>On Sustaining Causes</i>
Caus. Morb.	<i>De Causis Morborum</i>	<i>On the Causes of Diseases</i>
Caus. Puls.	<i>De Causis Pulsuum</i>	<i>On the Causes of the Pulse</i>
Caus. Resp.	<i>De Causis Respirationis</i>	<i>On the Causes of Breathing</i>
Caus. Symp.	<i>De Symptomatum Causis</i>	<i>On the Causes of Symptoms</i>
Comp. Med. Gen.	<i>De Compositione Medicamentorum per Genera</i>	<i>On the Composition of Drugs According to Kind</i>

¹ The works cited are those referenced in the volume, for readers' convenience. For the most recent comprehensive list of Galenic works with references to editions and modern translations, see the Appendix in P. N. Singer (ed.), *Psychological Writings*, Cambridge: Cambridge University Press, 2013: 431–44. See also the bibliographical survey of the Galenic corpus by G. Fichtner, *Corpus Galenicum. Bibliographie der galenischen und pseudogalenischen Werke*. Berlin: Berlin-Brandenburgische Akademie der Wissenschaften, at http://galen.bbaw.de/online-publications/Galen-Bibliographie_2017-05.pdf (accessed 16 July 2018).

(cont.)

Abbreviation	Latin Title	English Title
<i>Comp. Med. Loc.</i>	<i>De Compositione Medicamentorum secundum Locos</i>	<i>On the Composition of Drugs According to Places</i>
<i>Cons.</i>	<i>De Consuetudinibus</i>	<i>On Customary Practices</i>
<i>CP</i>	<i>De Causis Procatarteticis</i>	<i>On Antecedent Causes</i>
<i>Cris.</i>	<i>De Crisibus</i>	<i>On Crises</i>
<i>Cur. Rat. Ven. Sect.</i>	<i>De Curandi Ratione per Venae Sectionem</i>	<i>On Treatment by Bloodletting</i>
<i>Dec.</i>	<i>De Diebus Decretoriis</i>	<i>On Critical Days</i>
[<i>Def. Med.</i>]	<i>Definitiones Medicae</i>	<i>Medical Definitions</i>
<i>Dem.</i>	<i>De Demonstratione</i>	<i>On Demonstration</i>
<i>Diff. Feb.</i>	<i>De Febrium Differentiis</i>	<i>On the Different Kinds of Fevers</i>
<i>Diff. Puls.</i>	<i>De Differentiis Pulsuum</i>	<i>On the Different Kinds of the Pulse</i>
<i>Dig. Puls.</i>	<i>De Dignoscendibus Pulsibus</i>	<i>On Diagnosis by the Pulse</i>
<i>Foet. Form.</i>	<i>De Foetuum Formatione</i>	<i>On the Formation of the Foetus</i>
<i>Gloss.</i>	<i>Glossarium</i>	<i>Glossary of Hippocratic Terms</i>
<i>Hipp. Aer.</i>	<i>In Hippocratis de Aere Aquis Locis Commentarii</i>	<i>On Hippocrates' 'Airs, Waters, Places</i>
[<i>Hipp. Alim.</i>]	<i>In Hippocratis De Alimento</i>	<i>On Hippocrates' 'Nutrition'</i>
<i>Hipp. Aph.</i>	<i>In Hippocratis Aphorismos</i>	<i>On Hippocrates' 'Aphorisms'</i>
<i>Hipp. Art.</i>	<i>In Hippocratis De Articulis</i>	<i>On Hippocrates' 'Joints'</i>
<i>Hipp. Elem.</i>	<i>De Elementis ex Hippocrate</i>	<i>On the Elements According to Hippocrates</i>
<i>Hipp. Epid. I</i>	<i>In Hippocratis Epidemiarum Librum I</i>	<i>On Hippocrates' 'Epidemics I'</i>
<i>Hipp. Epid. II</i>	<i>In Hippocratis Epidemiarum Librum II</i>	<i>On Hippocrates' 'Epidemics II'</i>
<i>Hipp. Epid. III</i>	<i>In Hippocratis Epidemiarum Librum III</i>	<i>On Hippocrates' 'Epidemics III'</i>
<i>Hipp. Epid. VI</i>	<i>In Hippocratis Epidemiarum Librum VI</i>	<i>On Hippocrates' 'Epidemics VI'</i>
<i>Hipp. Fract.</i>	<i>In Hippocratis De Fracturis</i>	<i>On Hippocrates' 'Fractures'</i>
[<i>Hipp. Hum.</i>]	<i>In Hippocratis De Humoribus</i>	<i>On Hippocrates' 'Humours'</i>
<i>Hipp. Off. Med.</i>	<i>In Hippocratis De Officina Medici</i>	<i>On Hippocrates' 'Surgery'</i>

(cont.)

Abbreviation	Latin Title	English Title
<i>Hipp. Prog.</i>	<i>In Hippocratis Prognosticum</i>	<i>On Hippocrates' 'Prognostic'</i>
[<i>Hist. Phil.</i>]	<i>Historia Philosopha</i>	<i>On History of Philosophy</i>
HVA	<i>In Hippocratis de Acutorum Morborum Victu</i>	<i>On Hippocrates' 'Regimen in Acute Diseases'</i>
<i>Inaeq. Int.</i>	<i>De Inaequali Intemperie</i>	<i>On the Anomalous Dyskrasia</i>
<i>Ind.</i>	<i>De Indolentia</i>	<i>Avoiding Distress</i>
<i>Inst. Log</i>	<i>Institutio Logica</i>	<i>Introduction to Logic</i>
<i>Inst. Od.</i>	<i>De Instrumento Odoratus</i>	<i>On the Organ of Smell</i>
[<i>Int.</i>]	<i>Introductio seu Medicus</i>	<i>Introduction, or the Physician</i>
<i>Lib. Prop.</i>	<i>De Libris Propriis</i>	<i>On My Own Books</i>
<i>Loc. Aff.</i>	<i>De Locis Affectis</i>	<i>On Affected Parts</i>
<i>Marc.</i>	<i>De Marcore</i>	<i>On Marasmus</i>
<i>Med. Exp.</i>	<i>De Experientia Medica</i>	<i>On Medical Experience</i>
<i>Med. Nom.</i>	<i>De Nominibus Medicis</i>	<i>On Medical Names</i>
[<i>Mel.</i>]	<i>De Melancholia</i>	<i>On Melancholy</i>
MM	<i>De Methodo Medendi</i>	<i>Therapeutic Method</i>
MMG	<i>Ad Glauconem de Methodo Medendi</i>	<i>Therapeutics to Glaucon</i>
<i>Mor.</i>	<i>De Moribus</i>	<i>Character Traits</i>
<i>Morb. Diff.</i>	<i>De Morborum Differentiis</i>	<i>On the Different Kinds of Disease</i>
<i>Mot. Dub.</i>	<i>De Motibus Dubiis</i>	<i>On Problematical Movements</i>
<i>Musc. Diss.</i>	<i>De Musculorum Dissectione</i>	<i>On the Dissection of Muscles [for Beginners]</i>
<i>Nat. Fac.</i>	<i>De Naturalibus Facultatibus</i>	<i>On the Natural Capacities</i>
<i>Nerv. Diss.</i>	<i>De Nervorum Dissectione</i>	<i>On the Anatomy of the Nerves</i>
<i>Opt. Corp. Const.</i>	<i>De Optima Corporis Nostri Constitutione</i>	<i>On the Best Constitution of Our Bodies</i>
<i>Opt. Doct.</i>	<i>De Optima Doctrina</i>	<i>On the Best Method of Teaching</i>
<i>Opt. Med.</i>	<i>Quod Optimus Medicus Sit Quoque Philosophus</i>	<i>The Best Doctor is also a Philosopher</i>
<i>Ord. Lib. Prop.</i>	<i>De Ordine Librorum Propriorum</i>	<i>On the Order of My Own Books</i>
<i>Oss.</i>	<i>De Ossibus ad Tirones</i>	<i>On Bones for Beginners</i>
<i>Part. Art. Med.</i>	<i>De Partibus Artis Medicativae</i>	<i>On the Parts of the Art of Medicine</i>

(cont.)

Abbreviation	Latin Title	English Title
<i>Part. Hom. Diff.</i>	<i>De Partium Homoeomerium Differentia</i>	<i>On the Different Kinds of Homoeomerous Parts</i>
<i>Parv. Pil.</i>	<i>De Parvae Pilae Exercitio</i>	<i>On the Exercise with the Small Ball</i>
<i>PHP</i>	<i>De Placitis Hippocratis et Platonis</i>	<i>On the Doctrines of Hippocrates and Plato</i>
<i>Plat. Tim.</i>	<i>In Platonis Timaeum</i>	<i>On Plato's 'Timaeus'</i>
<i>Praen.</i>	<i>De Praenotione ad Epigenem</i>	<i>On Prognosis</i>
<i>Praes. Puls.</i>	<i>De Praesagitione ex Pulsibus</i>	<i>On Prognosis by the Pulse</i>
[<i>Prog. Dec.</i>]	<i>Prognostica de Decubitu ex Mathematica Scientia</i>	<i>On Prognosis Based on the Hour when a Patient Goes to Bed Based on the Science of Astrology</i>
<i>Prop. Plac.</i>	<i>De Propriis Placitis</i>	<i>On My Own Opinions</i>
<i>Puer. Epil.</i>	<i>Puero Epileptico Consilium</i>	<i>Advice to an Epileptic Boy</i>
<i>Puls.</i>	<i>De Pulsibus ad Tirones</i>	<i>On the Pulse for Beginners</i>
[<i>Puls. Ant.</i>]	<i>De Pulsibus ad Antonium</i>	<i>On the Pulse, to Antonius</i>
<i>Purg. Med. Fac.</i>	<i>De Purgantium Medicamentorum Facultate</i>	<i>On the Capacity of Cleansing Drugs</i>
<i>QAM</i>	<i>Quod Animi Mores Corporis Temperamenta Sequuntur</i>	<i>The Capacities of the Soul Depend on the Mixtures of the Body</i>
[<i>Rem. Parab.</i>]	<i>De Remediis Parabilibus</i>	<i>On Procurable Remedies</i>
<i>San. Tu.</i>	<i>De Sanitate Tuenda</i>	<i>On the Preservation of Health</i>
<i>Sem.</i>	<i>De Semine</i>	<i>On Semen</i>
<i>SI</i>	<i>De Sectis ad Eos Qui Introducuntur</i>	<i>On Sects for Beginners</i>
<i>SMT</i>	<i>De Simplicium Medicamentorum ac Facultatibus</i>	<i>On the Capacities of Simple Drugs</i>
<i>Soph.</i>	<i>De Sophismatibus penes Dictionem</i>	<i>On Linguistic Sophisms</i>
<i>Subf. Emp.</i>	<i>Subfiguratio Empirica</i>	<i>Outline of Empiricism</i>
[<i>Suc.</i>]	<i>De Succedaneis</i>	<i>On Substitute Drugs</i>
<i>Symp. Diff.</i>	<i>De Symptomatum Differentiis</i>	<i>On Distinctions in Symptoms</i>

(cont.)

Abbreviation	Latin Title	English Title
<i>Temp.</i>	<i>De Temperamentis</i>	<i>On Mixtures</i>
[<i>Ther. Pamph.</i>]	<i>De Theriaca ad Pamphilianum</i>	<i>On Theriac to Pamphilianus</i>
<i>Ther. Pis.</i>	<i>De Theriaca ad Pisonem</i>	<i>On Theriac to Piso</i>
<i>Trem. Palp.</i>	<i>De Tremore, Palpitione, Convulsione et Rigore</i>	<i>On Tremor, Palpitation, Spasm, and Rigor</i>
<i>Tum. Pr. Nat.</i>	<i>De Tumoribus Praeter Naturam</i>	<i>On Unnatural Swellings</i>
<i>UP</i>	<i>De Usu Partium</i>	<i>On the Function of the Parts of the Body</i>
[<i>Ur.</i>]	<i>De Urinis</i>	<i>On Urines</i>
<i>Ut. Resp.</i>	<i>De Utilitate Respirationis</i>	<i>On the Function of Breathing</i>
<i>Ven. Art. Diss.</i>	<i>De Venarum Arteriarumque Dissectione</i>	<i>On the Anatomy of Veins and Arteries</i>
[<i>Ven. Sect.</i>]	<i>De Venae Sectione</i>	<i>On Bloodletting</i>
<i>Ven. Sect. Er.</i>	<i>De Venae Sectione adversus Erasistratum</i>	<i>On Bloodletting, against Erasistratus</i>
<i>Ven. Sect. Er. Rom.</i>	<i>De Venae Sectione adversus Erasistrateos Romae Degentes</i>	<i>On Bloodletting, against the Erasistrateans at Rome</i>

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Currently she is working on books on the history of the Black Death, the largest pandemic in human history, and on learned medicine in the 'long twelfth century' (ca. 1070–1225) in Western Europe, which witnessed the reception of Arabic medicine and the adoption of Galenism as the foundation for medical teaching. She has published four books, many articles, and recently launched a blog devoted to Constantinus Africanus.

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Emeritus Professor of the History of Medicine at UCL and Professor of the History of Medicine at the First Moscow State Medical University, has worked extensively on the Galenic tradition in medicine, editing and translating several of Galen's works, as well as editing and translating important annotations by Vesalius. Among his recent books are *Galen: On Problematical Movements. Texts, Translation and Commentary* (2011), *Ancient Medicine* (2nd edition 2012), *Johann Guinter and Andreas Vesalius, Principles of Anatomy according to the Opinion of Galen* (2017), and *John Caius, An Autobiography* (2018). His latest project is a much-delayed study of Galen.

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Naturwissenschaft in orientalischem Gewand (2007), and *Zwischen Islamismus und Eurozentrismus* (2012). An edition of Galen's commentary on Hippocrates, *Airs, Waters, and Places*, preserved only in Arabic translation, is due to appear in 2018/19.

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Among her publications are the edition of *Tractatus de herbis* (MS London, BL, Egerton 747) attributed to the ps.-Bartholomew Mini de Senis (2009). Her current projects include a critical edition of the Salernitan pharmacological collection *Circa instans* and a study of the main sources and trends characterising late medieval pharmacology (especially the so-called ps.-Mesue).

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Barbara Zipser

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Note to the Reader

Primary sources are cited by the name of the author, followed by the title of the work, the numbering of the traditional division into books and/or sections where applicable, as well as a reference to the edition (volume in Roman numerals, page and line in Arabic numerals), e.g. Alexander of Tralles, *Therapeutics*, 8.2, ed. Puschmann (1879) 11.375.10–16.

Titles of Galenic works are cited by their most common Latin abbreviation, followed by reference to the Kühn edition and the most recent modern edition, if available, e.g. Galen, *UP*, 4.19, ed. Kühn (1822) 111.336 = ed. Helmreich (1907) 1.247.

Reference to translations of Galenic works in Arabic are cited by the most common Latin abbreviation, followed by *vers. arab.*, e.g. Galen, *Dec. vers. arab.*, 2, ed. Cooper (2011) 232.9.

Proper names of ancient authors follow LSJ (9th edn, 1940; revised supplement, 1996). The spelling of late antique and Byzantine names follows, in most cases, *The Oxford Dictionary of Byzantium* (1991), e.g. ‘Aetios of Amida’ instead of ‘Aetius of Amida’. For the sake of convention, texts in the Hippocratic Corpus are referred to as being by [Hippocrates].

Transliteration of Greek terms follows the Library of Congress system, e.g. ‘physis’ not ‘phusis’, but ‘euros’ not ‘eyros’.

Transliteration of Arabic terms generally follows the Library of Congress system, but with a few variations within individual chapters, e.g. ḥ not kh, ġ not j, and š not sh.

Where the original word or an implied word needs to be made explicit for reasons of clarity, it is supplied within parentheses and square brackets respectively, e.g. ‘I (*egō*) do not believe that these [recommendations] are fitting for those having a warmer disposition’.

Introduction

Petros Bouras-Vallianatos and Barbara Zipser

Galen was born in AD 129 in Pergamum, in Asia Minor, then part of the Roman Empire.¹ His first studies were in his home town with the strong support of his father, Nicon, a well-established Greek architect who encouraged Galen to become a physician. He travelled to Smyrna and Alexandria to receive further education in medicine and philosophy. After returning to Pergamum in 157, he was appointed chief physician to the gladiators. After a four-year stay there, he moved to Rome, arriving in the summer of 162. In the interim, he travelled a good deal, including visits to Lycia, Syria, and Cyprus, increasing his knowledge of herbal and mineral drugs. Galen was active in Rome, not only treating patients but also participating in public debates and exhibitions, including spectacular anatomical demonstrations. He established his reputation quite quickly, securing the patronage of powerful Roman individuals. He fled the capital in 166, but returned in 169 at the behest of the imperial family, offering treatments to the Emperor Marcus Aurelius (r. 161–80), and the emperor's son Commodus. During his second stay in Rome, especially from 169 to 176, Galen was particularly productive, writing a substantial part of his medical corpus. He most probably spent the rest of his professional career in the capital, dying around 216/17.

Galen was the most prolific medical author of antiquity, and added significantly to the existing medical knowledge by making several important observations in a variety of medical disciplines, including anatomy, physiology, and pharmacology, always based on his own vast practical experience.² His corpus constitutes by far the largest collection of extant writings by a single Greek author, consisting of more than 100 works in Greek, with another ten or so preserved completely or partially through their medieval translations into Arabic, Latin, or Hebrew. Galen also had a profound interest in philosophy, authoring works on logic and moral philosophy. He also wrote on other topics,

- 1 On Galen's life and career, see the monographs by Schlange-Schöningen (2003); Boudon-Millot (2012); and Mattern (2013). Nutton (2013: 222–53) offers a succinct account of Galen's life and contributions in light of the wider ancient medical milieu. See also Robert Alessi (Chapter 15) in the present volume, who discusses the long biography of Galen by Ibn Abi Uṣaybi'ah (d. 1270) in *Sources of Information on the Classes of Physicians*.
- 2 For an introduction to Galen's medical contributions and thinking, see the large edited volume of the *Aufstieg und Niedergang der römischen Welt* by Haase (1994); Hankinson (2008); and Gill, Whitmarsh, and Wilkins (2009).

including philology and literary criticism, but most of his non-medical works have not survived.

Details about Galen's works can be found in his two unique autobibliographical treatises, *On My Own Books* and *On the Order of My Own Books*, in which he provides both a list of his works arranged thematically and the order in which a prospective physician should consult his oeuvre. His corpus was translated widely into Latin, Syriac, Arabic, and Hebrew, and shaped the foundation of medical knowledge in both the East and West. Galen's influence reigned supreme over medicine for more than a millennium and a half, playing a significant role in medical practice and the way later authors developed their own theories on the understanding and treatment of the human body.

The reception of Galen's theories and works has not to date been the subject of a comprehensive study. Readers are limited to brief surveys and a few detailed studies covering a specific cultural movement or environment,³ or brief diachronic overviews.⁴ The sole systematic survey of the topic was published by the indefatigable Owsei Temkin, almost half a century ago.⁵ During the last three decades in particular, there has been growing interest in Galenic scholarship, making the publication of an up-to-date reference volume on Galen's reception a necessity.⁶ Our volume aims to cover this lacuna by bringing together a large number of experts on Galenic studies in order to provide an introduction and guide to Galen's long-lasting influence extending across various periods, cultures, and intellectual centres. The goal is to meet the needs of a variety of audiences, including students and scholars, as well as non-specialist readers interested in Greek medicine and its reception. We also hope this volume will inspire future studies on Galen's reception.

The book is split into five parts. The first three parts include chapters focusing on the reception of Galen in three significant medieval environments, the late antique and Byzantine world, the Islamic world, and the European West.

3 For example, Boudon-Millot (2013) provides a brief, informative overview of Galen in medieval Islamic medicine. Another example is the recent issue of the *Medicina nei Secoli* in which sixteen detailed studies are devoted to the Latin translations of Galen's corpus; see the introduction to the issue by Fortuna, Garofalo and Rosseli (2013).

4 See the very useful introduction to Galen's influence from antiquity to the modern era by Nutton (2008) and the brief entry by Rütten (2010). See also the overview by Cosmacini in Cosmacini and Menghi (2012: 91–170), and the outdated chapter by Sarton (1954: 88–93).

5 Temkin (1973: 51–192).

6 In using and referring to the term 'reception', we have adopted the approach of Lorna Hardwick and Christopher Stray (2008: 1): 'By "receptions" we mean the ways in which Greek and Roman material has been transmitted, translated, excerpted, interpreted, rewritten, re-imaged and represented'.

Part 4 deals with the reception of Galen from the early modern to the modern period, with contributions arranged in chronological order. Part 5 brings together chapters dealing with diverse cultural settings ranging from the reception of Galen in the Hebrew, Armenian, and alchemical traditions to Galen's presence in Asia, as well as his representations in manuscripts and frescoes.

The topics covered in the volume can be broadly divided into three thematic groups. First, textual transmission and dissemination, both in terms of the direct tradition of Galen's works and any associated works derived from or substantially influenced by Galen, and thus facilitating the spread of the Galenic tradition. Second, the reception of Galenic thought in medical practice and its influence on the development of certain medical ideas. And third, the ways in which Galen was received and depicted in non-medical contexts. This list of topics is by no means exhaustive, and one can easily find numerous connections between and among topics. It was merely drawn up to provide a gateway to the volume.

First, the textual tradition. This topic is discussed in a number of chapters, as it forms the cornerstone of the reception of Galen *per se*. Paola Degni (Chapter 6) presents an introduction to the Greek tradition, tracing the story of manuscript copies across various cultural contexts. This topic has recently received a great deal of attention in light of the discovery of a fifteenth-century Greek manuscript (Codex no. 14 of the Vlatadon monastery in Thessaloniki) which preserves *in toto* Galenic works previously considered lost (*Avoiding Distress*) or that survived only in part (*On My Own Opinions*). Interestingly, Robert Alessi (Chapter 15) discusses Galen's place in Ibn Abī Uṣaybi'ah's work, in which can be found an extraordinary list of Galenic and pseudo-Galenic works extant in thirteenth-century Cairo and Damascus, including works that have not otherwise survived.

Galenic works were also transmitted indirectly through their inclusion in medical handbooks. As Petros Bouras-Vallianatos (Chapters 2 and 4) shows, excerpts from Galenic works formed the basis of a number of late antique and Byzantine compilations. They mainly aimed to present Galenic thought in a more concise, and therefore also more accessible, manner. They quite often also included excerpts from other authors, including some whom Galen criticised in his works, such as Archigenes and Athenaeus. The same compilation process pertained to Byzantine collections of recipes for daily practice, so-called *iatrosophia*, which are described by Barbara Zipser (Chapter 5). The main advantage of a brief *iatrosophion* over a long compilation would have been its portability. Sometimes manuscripts preserve pictorial portraits of the Pergamene physician, which can give us an idea of how Galen was perceived

by his medieval audiences, as Stavros Lazaris (Chapter 31) shows. There are only a few such miniatures, which is perhaps due to the high cost involved in their production, but it is still possible to recognise styles and poses in these portraits.

In contrast to attempts at condensing the Galenic oeuvre in compilations, there were also significant initiatives that aimed to produce particular corpora of Galenic works for specific audiences. Ivan Garofalo (Chapter 3) discusses the late antique canon of Galenic works consisting of sixteen treatises, or groups of them, that not only formed the basis of the medical education offered by the School of Alexandria, but also influenced the way specific Galenic works were transmitted and approached in later centuries. Closely connected with this is the production of associated commentaries and summaries of Galen's works intended as companions to the readers. New corpora of Galenic works were also produced through translations to meet the needs of new audiences. Siam Bhayro (Chapter 8) and Glen Cooper (Chapter 9) discuss the Syriac and Arabic translations of Galen's works. Particular attention is paid to the adaptation of Galen's work in line with the background of respective audiences. Monica Green (Chapter 17), who has made a detailed survey of surviving manuscripts from 1075 to 1225, shows that only one authentic Galenic work, *Art of Medicine*, was included in early medical corpora in the medieval West. It was not until the late thirteenth century that Galen acquired a more prominent position, by virtue of a corpus of some thirty-five works, the so-called 'new Galen', that could be produced thanks to the efforts of translators, working initially from Arabic and, later on, also from Greek into Latin, as discussed by Brian Long (Chapter 18) and Anna Maria Urso (Chapter 19), respectively.

Iolanda Ventura (Chapter 21), in her case study on Galen's pharmacological work *On the Capacities of Simple Drugs*, emphasises the decision-making processes of translators in selecting sources for translation. Michael McVaugh (Chapter 20) examines the introduction of the Galenic corpus to medieval universities and its subsequent reception. Stefania Fortuna (Chapter 22) and Piero Tassinari (Chapter 26) describe the production of corpora in the form of printed editions that aimed to address the resurgence of interest in Galen in the sixteenth and nineteenth centuries, respectively, which made standardised forms of the Galenic texts more widely accessible. The corpus of Hebrew translations, made either from Arabic or Latin versions, is described by Carmen Caballero-Navas (Chapter 27). An area in which there is still considerable potential for ground-breaking primary research concerns the possible routes through which Galenic works became available to Armenian authors, as described by Alessandro Orengo (Chapter 28, with contributions by Irene Tinti).

The Galenic texts contained a great deal of highly specialised vocabulary, which often puzzled readers throughout the centuries. Antoine Pietrobelli (Chapter 1) describes a lexicon that covers the medical terminology of pre-Galenic and Galenic times. Bhayro (Chapter 8) discusses the expansion of the Syriac vocabulary and different approaches to translations, while Orengo (Chapter 28) describes a Graeco-Arabic dictionary with Armenian glosses. Another aspect of the direct textual tradition of Galen concerns texts that have been falsely attributed to him, either mistakenly or fraudulently. Zipser (Chapter 5) shows how titles given to entire medieval medical volumes can be misleading in this respect, and Bouras-Vallianatos (Chapter 4) references some notable examples of pseudo-Galenic treatises connected with Byzantine medical practice. Matteo Martelli (Chapter 29) discusses the reception of works ascribed to Galen in the medieval alchemical corpus. Lastly, Christina Savino (Chapter 23) examines in detail how Galenic texts were re-created through forgeries in the Renaissance.

The second major topic of the volume is Galen's impact on medical theory and practice. By the early seventh century at the latest, Galen's theories dominated rational approaches to medicine, leading to what has been labelled Galenism. Bouras-Vallianatos (Chapter 4) looks at how Galenic theories on diagnosis and physiology were developed and complemented in the Byzantine world, often with worthwhile contributions, as in the case of John Zacharias Aktouarios. The subject of the transmission and reception of Galenic medical ideas in the Islamic world is covered by Pauline Koetschet (Chapter 10) and Gotthard Strohmaier (Chapter 11), who look at the most influential authorities of the medieval Islamic medicine, i.e. Abū Bakr al-Rāzī (or Rhazes) and Ibn Sīnā (or Avicenna), respectively. Abū Bakr al-Rāzī makes wide use of Galen in his *Comprehensive Book on Medicine*, often including personal remarks, as in the case of melancholy, while Ibn Sīnā pays particular attention to understanding the cardiovascular system. Miquel Forcada (Chapter 12) discusses how Galen's work formed the basis on which practical handbooks were produced in Islamic Iberia. Like Strohmaier in respect to Ibn Sīnā, Y. Tzvi Langerman (Chapter 13) examines the competing influences of Aristotle and Galen in the work of Jewish philosopher Moses Maimonides, writing in Arabic. Leigh Chipman (Chapter 16) opens up a window onto the way in which Galenic pharmacological knowledge was adopted and expanded in the medieval Islamic world by looking at pharmacopoeias and recipe books, including the prescriptions of the Cairo Genizah, consisting of a great many often fragmentary formal and informal texts that provide evidence of the medical needs and practices of the area.

Fortuna (Chapter 22) explores the attempts by Renaissance scholars and university professors, such as Nicolò Leonicensio, to interpret Galen, and Vivian

Nutton (Chapter 24) examines Galen's influence in the early modern period. Nutton, in particular, highlights how significant advances in anatomical and physiological observations by sixteenth-century scholars, such as Andreas Vesalius, led to the gradual neglect of Galenic theories on these subjects. Maria Pia Donato's contribution (Chapter 25) follows on directly from this, analysing the effects of the early modern reception of Galen in the seventeenth and eighteenth centuries, and showing that Galen played a role in the rise of mechanical philosophy and chemical medicine. Tassinari (Chapter 26) discusses the revival of interest in Galen's medical theories and, in particular, his views on sphygmology in the nineteenth century. Perhaps the chapter with the broadest scope is that by Ronit Yoeli-Tlalim (Chapter 30), who examines the influence of Galenic thought on the medicine practised and taught in Tibet, China, and India, including Unani tibb, a simplified form of Galenic medical thought still practised in Asia.

Some authors have taken a critical approach to Galenic theories in a variety of contexts. For example, Bouras-Vallianatos (Chapters 2 and 4) discusses how Alexander of Tralles, unlike Symeon Seth, informed his criticism with observations linked to his medical practice. A prominent field of study involves examining the challenges to Galenic theories in the medieval Islamic medical tradition. Koetschet (Chapter 10) discusses the case of al-Rāzī, who authored *Doubts About Galen* for this purpose. Nahyan Fancy (Chapter 14) further elaborates on the relationship of Ibn Sīnā to Galen by looking at Ibn al-Nafīs, who rejected Galen's theory on the circulation of the blood and introduced his own theory on pulmonary transit. For the definitive answer as to how the blood circulates, the world would have to wait until the seventeenth century, for William Harvey, as Nutton (Chapter 24) explains in his contribution. Further interesting examples of challenges to Galenic theory are presented by Chipman (Chapter 16), who discusses al-Kindī's ideas on the degree of intensity of qualities of pharmacological substances, and by Langermann (Chapter 13), who focuses on the critique of Galen by Moses Maimonides on philosophical grounds.

The third topic covered in this volume is the reception of Galen outside medicine and book production. In this respect most of the content involves theological texts or philosophical disputes. Pietrobelli (Chapter 1) looks at Galen's reception among early Christian authors, including discussions of heresy, and Bouras-Vallianatos (Chapter 4) examines how Galen's teleological accounts of the human body fed into works on Christian anthropology in Byzantium. The growing popularity and authority of Galen among Christian audiences is also reflected in his representations in frescoes in Christian churches in the West and in the East, a subject discussed in detail by Lazaris (Chapter 31). Orengo (Chapter 28) describes mentions of Galen in Armenian theological texts. Galen's authority outside medical circles is attested by the widespread

reference to his medical authority and often to the works themselves in non-medical works in Byzantium, as Dionysios Stathakopoulos (Chapter 7) aptly shows. Koetschet (Chapter 10) and Forcada (Chapter 12) address Galen's philosophical influence in the Islamic world. Galenic moral philosophical advice seems to have had a special appeal to medieval Jewish authors, as explained by Caballero-Navas (Chapter 27). Lastly, Martelli (Chapter 29) explores the impact of Galenic pharmacology on the late antique, Byzantine, and Syro-Arabic alchemical traditions.

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PART 1

Galen in Late Antiquity and Byzantium



Galen's Early Reception (Second–Third Centuries)

Antoine Pietrobelli

Galen must have been a celebrity during his lifetime. As a descendant of an aristocratic lineage of architects and surveyors, he was well known in Pergamum, his hometown, but he gained fame in Rome (162–6) by delivering public lectures and anatomical demonstrations before the circles of power. As a newcomer, he quickly gained access to the top of the political pyramid, becoming an *archiatros*,¹ imperial physician, under the Antonine and Severan dynasties. He was the personal physician of Emperor Marcus Aurelius, the Emperor's son Commodus, and later of the empress Julia Domna, Septimius Severus' second wife. His worldwide and long-lasting renown, however, is not due to this prominent position, but to his prodigious production of books.

The Arabic tradition holds that Galen lived eighty-seven years – seventeen as a student and seventy as a scholar and teacher. This proverbial statement might not be far from the truth given that Galen started producing texts at a very young age and continued to do so throughout his life, writing hundreds of books, thanks to painstaking work both night and day.

Galen's name became so widely known during his lifetime that it was usurped. In a fragment of a lost copy of *On Diseases which are Difficult to Cure*, preserved in Arabic by Ibn Abī Uṣaybi'ah,² Galen relays an anecdote in which he unmasks a quack from the East who is pretending to have been taught by Galen himself. In *On My Own Books*,³ another anecdote relates that Galen was walking in the Sandalarium, the bookseller's district of Rome, when he came across a book attributed to him but that he had not written. If we trust both testimonies, and forgive Galen his immodesty, the two anecdotes testify to the celebrity of his name in the Roman Empire.

Galen reports that he received correspondence from Spain, Gaul, Asia Minor, Thrace, and other places sent by patients seeking a cure for cataracts.⁴ Such “medicine by mail” is attested by a preserved letter from Galen addressed

¹ Schlange-Schöningen (2003: 187–221).

² Ibn Abī Uṣaybi'ah, *Sources of Information on the Classes of Physicians* ('*Uyūn al-anbā' fī ṭabaqāt al-aṭibbā'*), 5, tr. Kopf (1971) 159.

³ Galen, *Lib. Prop.*, pr.1, ed. Kühn (1830) XIX.8 = ed. Boudon-Millot (2007) 134.1–8.

⁴ Galen, *Loc. Aff.*, 4.2, ed. Kühn (1824) VIII.225.

to Caecilianus, the father of an epileptic boy living in Athens.⁵ In *On Antidotes*,⁶ Galen speaks of friends who could provide him with pharmacological substances from Syria, Palestine, Egypt, Cappadocia, Pontus, Macedonia, and western lands, where the Celts and the Iberians lived. Galen was undoubtedly the most renowned physician of his time, and he was in contact with the political elite all over the Roman Empire. What, however, attributed to him further popularity soon after his death?

This chapter examines Galen's reach at the time of the earliest mentions of his name and allusions to his texts. Some of them appeared while Galen was alive, and others belong to the later third century, which has been described as the 'darkest epoch of the history of medicine'⁷ and a 'blank spot'.⁸ In 1981, John Scarborough attempted to cast suspicion on the rare testimonies referring to Galen during this period, namely, the *Deipnosophists* of Athenaeus (early third century AD).⁹ In 1984, Vivian Nutton nuanced Scarborough's very pessimistic judgment, adding new material on Galen's reception at that time.¹⁰ This chapter summarises past and recent research on the subject and also offers new perspectives for better understanding this obscure transitional period.¹¹ It renders through a socio-cultural approach a picture of Galen in the eyes of his contemporaries that might differ from the traditional one. Who read Galen in the second and third centuries? Why? Which of his books were best-sellers or at least the most widely read?

By Galen's own assessment, his book production can be divided into two stages. Initially, he composed books exclusively on demand and for his friends, but later he wrote books for public editions (*pros koinēn ekdosin*) to reach a broader audience.¹² In *Avoiding Distress*, a recently discovered text, he states that he is storing copies of all his writings at his second home in Campania. He also says that he is sending copies of all his writings to friends living outside Rome so they could deposit them in public libraries.¹³ So, during his lifetime, Galen's texts were spread across the empire via his friends and preserved in public libraries. If the Pergamum library was one of them, it would not be

5 Galen, *Puer. Epil.*, ed. Kühn (1826) XI.357–78.

6 Galen, *Ant.*, 1.2., ed. Kühn (1827) XIV.8–9.

7 Temkin (1932: 18).

8 Kudlien (1968: 25).

9 Scarborough (1981).

10 Nutton (1984).

11 On Galen's early reception, see Temkin (1932; 1973); Scarborough (1981); Nutton (1984); Boudon-Millot (2007: CIII–CVII).

12 See, for instance, Galen, *Lib. Prop.*, 9.4–8, ed. Kühn (1830) XIX.34–5 = ed. Boudon-Millot (2007) 160.4–161.1.

13 Galen, *Ind.*, 20–1, ed. Boudon-Millot and Jouanna (2010) 8.11–9.5.

far-fetched to suspect they could also be found in the libraries of Athens and Alexandria, where Galen had contacts and friends.

This diffusion of Galen's texts can also be traced by information beyond the Galenic corpus. The earliest external sources spring from Rome, Athens, and Alexandria, where Galenic writings were publicly available. Surprisingly, they are not from the medical literature, but from the sophist Athenaeus, the philosopher Alexander of Aphrodisias, and from the Christian thinker Clement of Alexandria. To highlight Galen's aura during his lifetime and soon after his death, one cannot limit oneself to explicit mentions of Galen's name. Rather, every hidden reference to his thinking and writings must be identified and examined for an accurate perspective.

1 Galen and the Naucrateans

Galen's name appears for the first time outside his corpus in the *Deipnosophists* of Athenaeus. For the sake of chronology, however, a new hypothesis that could link Galen with another Naucratean, Julius Pollux, should be examined.¹⁴ Pollux (Polydeukēs), a sophist, was appointed by the Emperor Commodus to hold the Athenian chair of Greek rhetoric in AD 178. Marcus Aurelius had established this public position in 176 alongside four imperial chairs of philosophy. From the *Souda*, the tenth-century Byzantine lexicon, it is known that Pollux composed a poem (*epithalamium*) for Commodus' wedding when he married Bruttia Crispina in 177. Pollux seems to have been a protégé of the young Commodus at that time.

Pollux wrote a thesaurus of Attic words, *Onomasticon*, which is arranged according to subject matter rather than alphabetically. Each of the ten books of the *Onomasticon* is dedicated to Caesar Commodus. Its progression is difficult to follow, jumping from one word to another, sometimes with a series of synonyms, sometimes with morphologically derived nouns, adjectives, or verbs, and sometimes with lengthy quotations or catalogues of species. The text is also untranslatable and quite unreadable. One can hardly fathom it without reconstructing the verbal and physical environment of Pollux's vivid instruction to Commodus or others when he held the imperial chair in Athens.¹⁵ The *Onomasticon* was composed to instil proper elocution (*pros euglōttian*) into

14 On Julius Pollux' life, see the notice 'Πολυδεύκης' in the *Suda*, II, 1951, ed. Adler (1935) IV.163, and Philostratus, *The Lives of the Sophists*, 2.12.592–3, ed. Wright (1921) 236–40. See also Zecchini (2007; 2013); Conti Bizzarro (2013: 1–40).

15 On the dialogue with his addressee, see Radici Colace (2013).

its readers, at a time when Atticism flourished among Greek writers and the Roman political elite. One can assume the *Onomasticon* mirrors the work of a rhetoric professor, or *rhetor*, teaching his pupils how to speak in a perfect Attic language.

Pollux obviously intended this lexicon to be for a young boy studying rhetoric after having experienced the teachings of a grammarian. In the dedicatory letter introducing the fourth book, Pollux alludes to the youthfulness of Commodus (4.1: *ei kai neos ei*, 'even if you are young'). Commodus was sixteen when he married Bruttia, and seventeen when he appointed Pollux to the imperial chair in Athens. The writing of the first books of the *Onomasticon* would therefore appear to have been before 177.

Despite the chaotic evolution of the text, a pedagogic arrangement is roughly recognisable: book 1, the gods, the kings, and their activities; book 2, the parts of the human body; book 3, family, friends, and social and political links; book 4, the different disciplines of the Greek *paideia*; book 5, hunting and animals; book 6, banquets, food, and drinks; book 7, trades; book 8, courts, justice, and judicial institutions; book 9, polis, buildings, coins, and so on; and book 10, vessels and tools. Book 7 must have been written in Athens, as Pollux apologises for his lack of time due to his two daily lectures, one from the chair (*ek tou thronou*) and another standing (*orthostadēn*).¹⁶ The organisation of the *Onomasticon* fluctuates between ambitions of high didacticism¹⁷ and a desire to flatter the young Commodus' interests (e.g., hunting, banquets),¹⁸ perhaps reflecting the personal connection and familiarity between Pollux and the emperor.

Galen had become part of Marcus Aurelius' entourage as early as 169. The emperor entrusted the health of his son to Galen when Commodus (161–92) was eight years old. It is not known whether Galen and Pollux ever met, but some parts of the *Onomasticon* are, as noted, devoted to medicine, and Pollux indicates that he has consulted the writings of physicians for his lexicographical collection. Hippocrates is often mentioned, but not Galen. Although Pollux borrows all his Attic words from the authors of the classical period, he seems to rely on post-Hippocratic medical theories. When, for example, he alludes to the tunics of the eyes, Pollux enumerates four of them, as Galen does in his anatomical treatises, whereas Hippocrates mentions only two. The four tunics

16 Pollux, *Onomasticon*, 8.1, ed. Bethe (1998) IX. 2.110.11–12.

17 A famous passage on the epithets of the good king and of the tyrant (1.40–2) was translated by Erasmus (1516) 1.61; for a reprint and a French translation, see Turchetti (2015: 224–6).

18 See *Augustan History, Life of Commodus*, 1.8, ed. Magie (1930) 1.266.1–4.

of the eye are a legacy of the Hellenistic period.¹⁹ Such an anatomical theory can also be found in *On the Names of the Parts of the Human Body* by Rufus of Ephesus (fl. second half of the first century AD).²⁰ In Rufus' book, the passage is followed by a remark on Hippocrates' use of the word 'tooth' (*odous*) for the first cervical vertebra, which is also found in Pollux (2.131). Pollux's medical sources should be further studied, as these comments indicate the importance of medicine, and perhaps Galen's influence,²¹ in the *Onomasticon*.

As Pollux was involved in medicine, Galen also specialised in Attic lexicography.²² In *Avoiding Distress* (23b–24b), Galen regrets the lack of influence of his work on the vocabulary of the entire Old Comedy, as it was intended 'to be of some value for orators and grammarians, or in general for anyone who might want to use an Attic idiom'.²³ At the end of *On My Own Books*, Galen provides a list of lexicographical treatises he had composed. He is not very laudatory toward the defenders of a pure Atticism.²⁴ In *On the Capacities of Foodstuffs*, he declares, 'I myself use the name that people use nowadays, since I think that it is better to teach things clearly than to Atticise in an old-fashioned way'.²⁵ Pollux could be one of the Atticist purists Galen criticises. Pollux is also a possible target of Lucian in his *Lexiphanes*.²⁶ The reproach for using thousand-year-old words instead of the established currency of speech (§20) and lack of grace and clarity (§23) could apply to the strange lexicon compiled by Pollux through mental association. In Lucian's dialogue, the hyper-Atticist Lexiphanes is purged of his linguistic deviances by a physician. No concrete proof directly links Galen with Pollux, but both worked in Commodus' entourage and they shared common interests, maybe through mutual influences.

Athenaeus is another scholar from Naucratis. Like Pollux, he went to Rome to make use of his talents. Athenaeus wrote *Deipnosophists* in the first decades of the third century, part of it when Galen was still alive.²⁷ He places his narrative in the historic context of a learned circle sponsored by Larensius, a rich Roman of equestrian rank who was charged by the Emperor Marcus

19 Petit (2009: 140, n.3); Zipser (2009).

20 On Pollux and Rufus, see Haupt (1869: 224–8); Zarncke (1885); Conti Bizzarro (2013: 10, 12–14).

21 Conti Bizzarro (2013: 29–30, n.126) quotes many Galenic passages that illustrate one of Pollux synonyms.

22 On Galen and Atticism, see Herbst (1911); Barnes (1997: 14, 21).

23 Galen, *Ind.*, 24b, ed. Boudon-Millot and Jouanna (2010) 9.18–21; tr. Nutton (2013: 85).

24 Boudon-Millot and Jouanna (2010: 84).

25 Galen, *Alim. Fac.*, 2.9.12, ed. Kühn (1823) VI.579 = ed. Helmreich (1923) 279.7–9 = ed. Wilkins (2013) 107.18–20; tr. Powell (2003: 80).

26 On Pollux and Lucian, see Ranke (1831).

27 On the *Deipnosophists*, see Braund and Wilkins (2000); Jacob (2013).

Aurelius with supervising the temples and sacrifices and who became *procurator patrimonii* at the end of Commodus' reign. A priest and high official in Rome, Larensius was also the patron of a circle of intellectuals and the host of banquets or symposia staged in the *Deipnosophists*. The fifteen books of the *Deipnosophists* are dedicated to Larensius to thank him for his patronage and hospitality. The narrative is partly fictive and utopic, because the books are supposed to relate a unique banquet, but it is also anchored in the social reality of the imperial society in which Galen participated. Athenaeus includes among Larensius' guests and interlocutors the great jurist Ulpian of Tyre and the famous physician Galen of Pergamum. Was Galen really part of Larensius' circle?

Galen appears three times in the *Deipnosophists*, but only in the first three books. Initially, Galen is presented as a protagonist at the symposium (1.1e). Later on, he intervenes as a dietician to speak about wines (1.26c–27d) and types of bread and cereal (3.115c–116a). Since Scarborough's assessment, the presence of Galen in the *Deipnosophists* has been considered a posthumous work and purely fictitious on the ground that the words attributed to Galen are not quoted from his books. Scarborough goes further in suspecting an interpolation, since the first two passages are only transmitted through a Byzantine epitome. Nutton has a less suspicious position, taking the authenticity of the text for granted.²⁸ Athenaeus' Galen is considered a fictive character, whose words have no connection to Galen's writings.²⁹ Further examination of the three appearances by Galen in the *Deipnosophists* lends itself to a more literal interpretation. I do not want to support that Athenaeus transcribed the exact words pronounced by Galen at Larensius' symposia, but to question Galen's portrayal in Athenaeus' eyes.

As noted, Galen is only present in the first three books, as if the others were composed after his death. At his first appearance, at the beginning of book 1 (1.1e), Galen is introduced as one of the symposiasts: 'Galen of Pergamum, who has published more works on philosophy and medicine than all his predecessors, and who is as capable as any of the ancients in the exegesis'.³⁰ Athenaeus depicts Galen as a prolific writer who surpassed his predecessors in his unrivalled book production. He is presented as a philosopher as well as a physician by his contemporary, whereas most modern scholars did not include

28 Nutton (1984); Schlange-Schönigen (2003: 125).

29 See, for instance, Boudon-Millot (2007: cv) and Magdelaine (2007: 360–1). As Boudon-Millot (2007: LXXXV) suggested, Galen is not supposed to have quoted his books in a such context. As a protagonist of the symposion, he was expected to speak freely from his own experience.

30 Tr. Gulick (1923: 7), slightly modified.

him in the canon of ancient philosophers. Athenaeus points out that Galen excelled in the art of *hermēneia*. It seems that this remark refers to his massive exegeses on Hippocrates, Plato, Aristotle, and others. If Athenaeus' Galen is fictitious, this first sketch does not contradict what is known about the historical figure of Galen.

At Galen's second appearance, in the same book (1.26c–27d), he makes a speech on Italian wines. Scarborough considers this speech as not authentically Galenic,³¹ but this is not entirely accurate. When Galen comments in his third book on Hippocrates' *Regimen on Acute Diseases* (§§50–52), he dedicates many pages to the different types of wine and their therapeutic effects.³² Galen's listing of Italian wines in the *Deipnosophists* does not correspond to any of his writings on wines,³³ but it is nonetheless possible to detect specific features of Galen in this cataloguing. It starts with praise of Falernian wine, the best according to Athenaeus' Galen. Such a statement has echoes in Galen's books.³⁴ Galen's preference for Falernian wine was not specific to him. Pliny (*HN*, 14.62) also celebrated this wine as one of the best. Most of the other wines itemised by Athenaeus belong to the same region of Italy: Alban, Sorrentine, Privernian, Statan, Tiburtine, Gauran, Praenestine, Marsic, Ulban, Velitern, Calenian, Caecuban, Fudan, Signine, Caulinum, and Trebellic of Naples are vintages from Campania and its environs.³⁵ At the time of Galen and Athenaeus, Campania was an important region of wine culture, but these references might also be explained by Galen having owned a second home in Stabiae,³⁶ a small town near Vesuvius. It is impossible to know if the *Deipnosophists* reflects Galen's actual utterances, but since it must have been known by Roman aristocratic circles that Galen possessed a second residence in Campania,³⁷ Athenaeus did not put an unlikely praise of Campanian wines into his mouth. None of his contemporaries would have been surprised that Galen was a connoisseur of Campanian wines, since wine was one of his favourite dietetic prescriptions and since Campanian wines were available to Galen's Roman patients. Is it

31 Scarborough (1981: 19–20): 'it is possible that Galen did write some treatises on wine, in which he displayed his own aristocratic tastes, but there is absolutely no trace of such works'.

32 Galen, *HVA*, 3.1–8, ed. Kühn (1828) xv.626–49 = ed. Helmreich (1914) 218.1–230.12. On Galen and wine, see Béguin (2002).

33 Wilkins (2002).

34 Galen *Dig. Puls.*, 1.1, ed. Kühn (1824) viii.774.14–16. On Galen and the Falernian wine, see Boudon (2002).

35 On all these wines, see Tchernia (1986).

36 Raiola and Mascolo (2013).

37 Galen, *Ind.*, 20–1, ed. Boudon-Millot and Jouanna (2010) 8.11–9.5.

pure coincidence, a literary contrivance, or the reminiscence of an actual discussion with Galen?

In Galen's third appearance (3.115c–116a),³⁸ the guests are at the point of attacking their bread, when he interrupts the dinner to recite some sayings by the 'sons of Asclepiades' about breads and flours. He successively quotes Diphilus of Siphnos, Philistion of Locris, Andreas, and Mnesitheus. The first recitation is about the different breads (from barley and wheat) depending on the sifting of the meal; the second evokes the types of baking; Andreas' quotation mentions a Syrian bread with mulberries; and the last recitation lists different cereals from which breads are baked. Philistion of Locris and Mnesitheus of Athens are quoted by Galen in his *On the Capacities of Foodstuffs*, and the medical theory of the quotations fit Galen's own dietetic discourses.³⁹ Galen's intervention at Larensius' symposium seems rather realistic. One must remember that Galen inherited an interest in grains and seeds from his father. The Pergamene architect used to withdraw to the countryside, where he tested different seeds as a gentleman farmer.⁴⁰ In his dietetic writings, Galen shows great interest in cereals and the ways of preparing them to make bread and gruel.⁴¹ Athenaeus is not only reflecting Galen's reputation at the beginning of the third century, but he stages an historic character and draws an otherwise unknown Galen – a mundane Galen at dinner.

Another parallel may be drawn between the *Deipnosophists* and the Galenic corpus. Athenaeus references the Hippocratic treatise *On Regimen in Acute Diseases*, citing three titles for the same book: *On Regimen in Acute Diseases*, *On Barley-gruel*, and *Against the Cnidian Maxims* (2.45e–f). Galen is the only other source who refers to the three titles, in his *Commentary on Regimen in Acute Diseases*.⁴² Did Athenaeus read Galen's books? Did the two men have access to the same sources and libraries? Did they once meet? Were they part of the same circles? Was Galen still living when Athenaeus' first books began to be diffused? Could Galen have read the first books of the *Deipnosophists*?

These questions cannot be answered, but Galen and Athenaeus shared a learned and literate culture at a time when books were spreading among the circles of the Roman imperial elite. Writer-clients offered their books to patrons from whom they sought support. Books were read at *recitationes* to circles of friends (*philoï, amici*) and companions (*hetairoi, comites*), and diffused

38 On this passage, see Magdelaine (2007: 360).

39 Schlange-Schöningen (2003: 125–6).

40 Galen, *Alim. Fac.*, 1.37, ed. Kühn (1823) v1.552–3 = ed. Helmreich (1923) 261 = ed. Wilkins (2013) 84.6–85.5.

41 See, for instance, Gourevitch (2005).

42 Galen, *HVA*, 1.17, ed. Kühn (1828) xv.452–3 = ed. Helmreich (1914) 133.23–7.

from circle to circle across the empire.⁴³ Larensius' friends brought with them their erudition and their rare books, in leather bags (*strōmatodesmata*) or a box (*capsa/scrinium*), as contributions to the learned feasts in exchange for their patron's hospitality. Friendship and sociability among the Roman elite were forged by an exchange of books and knowledge. At the beginning of the third century, the old Galen might have frequented the circle of intellectuals led by the empress Julia Domna⁴⁴ that included the jurist Ulpian of Tyre, the historian Cassius Dio, and the sophist Philostratus, or the physician Serenus Sammonicus, who bequeathed to his son a library of 62,000 scrolls.⁴⁵ Julia Domna cultivated her circle for about twenty years in Rome and beyond.⁴⁶ After Galen's death she invited Origen, a future reader of Galen, to Antioch during her sojourn there.⁴⁷

That the two Naucrateans must have met Galen face-to-face shows how the Roman elite were interconnected and how books circulated around the Mediterranean. Rome attracted the most ambitious and talented provincial aristocracy from all parts of the empire. These provincials developed social bonds in the capital, before being posted by the imperial power to the different provinces or returning to their homeland. They travelled frequently with their books and libraries, like Galen's friends Flavius Boethus and Caius Aufidius Victorinus or like Julius Pollux.

2 Galen in Athens: Alexander of Aphrodisias

The second reference to Galen during his lifetime is found in Alexander of Aphrodisias' *Commentary on Aristotle's 'Topics'*.⁴⁸ Alexander cites Plato, Aristotle, and Galen as three famous thinkers (*endoxa*). He confirms what Athenaeus also noticed: during Galen's lifetime and afterwards, he was considered a philosopher, not just a physician. His contemporaries placed him on the same level as the two most distinguished ancient authorities on philosophy. Thanks to his books, Galen gained a reputation far and wide and undisputed peer recognition.

43 Starr (1987).

44 Schlange-Schöningen (2003: 218 and n.196).

45 *Augustan History, Gordian the Second*, 18.2–3, ed. Magie (1924) 11.412.1–8.

46 On Julia Domna's circle, see Bowersock (1969: 101–9).

47 Eusebius, *Church History*, 6. 21.3–4, ed. Lake (1932) 11.66.

48 Alexander of Aphrodisias, *Commentary on Aristotle's 'Topics'*, 8.5, ed. Wallies (1891) 549.25.

There is limited data on the life of Alexander of Aphrodisias (fl. early third century AD).⁴⁹ He hailed from the Roman province of Asia, like Galen. His father and namesake, Titus Aurelius Alexandros, was a philosopher. The son was taught in Aphrodisias by Adrastus,⁵⁰ the most renowned Aristotelian philosopher of his time, and then by three other Peripatetic masters, Herminius, Sosigenes, and Aristotle of Mytilene.⁵¹ Later, he was appointed to the imperial chair of Aristotelian philosophy in Athens. In turn, he dedicated his *On Fate* to the co-emperors Septimius Severus and his son Caracalla (r. AD 198–209). That is all the Greek sources say about Alexander and his relationship with Galen, but Arabic sources provide more information about the two men.

Arab scholars from the Middle Ages reveal another impression that Alexander held about the Pergamene physician.⁵² While the only mention of Galen in Alexander's Greek writings is laudatory, some of the texts preserved in Arabic are more aggressive and polemical. One issue must be clarified. Based on the Arabic doxography, there is no doubt that Galen and Alexander met. There is some confusion, however, in the Arabic tradition concerning Alexander of Damascus,⁵³ an Aristotelian philosopher whom Galen encountered during his first stay in Rome, and Alexander of Aphrodisias; Arabic sources speak of 'Alexander of Aphrodisias of Damascus'. Both Alexanders were Aristotelian teachers in Athens, but some twenty-five years apart. Many scholars have argued against this identification.⁵⁴

Galen was invited in AD 163 to perform an anatomical demonstration in Boethus' circle in Rome.⁵⁵ Among the spectators were the sophist Adrian of Tyre, Pollux's teacher, Demetrius of Alexandria, a pupil of Favorinus of Arelate and a member of the museum at Alexandria, and the philosopher Alexander of Damascus, Boethus' teacher in Peripatetic philosophy. Alexander of Damascus reacted in a hostile manner towards Galen, and a violent quarrel broke out. Since some of Alexander of Aphrodisias' treatises preserved in Arabic are polemical and against Galen, the names were easy to confuse. In the Arabic

49 The main historical source on Alexander is an engraved stone found in 2001 in Karacasu (Turkey) on the archaeological site of Aphrodisias; see Chaniotis (2004: 79–81); Sharples (2005); and Groisard (2013: vii–xvi).

50 Galen mentions Adrastus' commentaries in *Lib. Prop.*, 14.15, ed. Kühn (1830) XIX.43 = ed. Boudon-Millot (2007) 167.5–6.

51 Aristotle of Mytilene is mentioned by Galen, *Cons.* 1, ed. Schmutte (1941) 4.16–17.

52 On the Arabic Alexander of Aphrodisias, see Strohmaier (1978).

53 Galen, *AA*, 1. 1, ed. Kühn (1822) II.218.6–7; *Praen.*, 5, ed. Kühn (1827) XIV.627–8 = ed. Nutton (1979) 96–8, 189; on this Alexander, see S. Follet (1994).

54 Todd (1976: 4–11); Nutton (1984: 318–19); Thillet (1984, XXXIII–XLIX); Moraux (1985, 81, n.2); Todd (1995).

55 Mattern (2013: 146–9).

literature,⁵⁶ Alexander is said to have called Galen 'mulehead', either because of the shape of his head or because of his stubbornness in debate.

With this clarification, nothing indicates that Galen and Alexander of Aphrodisias ever met in the flesh.⁵⁷ One must assume, however, that Alexander read Galen because he considered him a man of repute, after Plato and Aristotle. The tenth-century Persian philosopher al-Sijistānī provides some details about Alexander's reading:

When at the end of his life Galen wrote *On My Own Opinions*, he confessed he did not know what to think and that he was defeated by the problems that exercised the philosophers. Thereupon Alexander of Aphrodisias remarked that Galen had taken eighty years of his life to come to the conclusion that he did not know, notwithstanding his labours in his own art, an art based on deduction as well as experience provided by the senses, which he had carried out to the benefit of mankind.⁵⁸

Such a criticism of Galen's epistemological agnosticism is not surprising from the mouth of a strict Aristotelian such as Alexander.⁵⁹ Different studies have tried to illustrate or deny a Galenic influence on Alexander's writings.⁶⁰

In the Arabic tradition, tracts attributed to Alexander refuting Galen are preserved in three noteworthy manuscripts (Scorialensis ar. 798, Istanbul Carullah 1279, and Tashkent 2385).⁶¹ *Refutation of Galen's 'On the Possible'*, *Refutation of Galen's 'On the First Mover'*,⁶² *Refutation of Galen's Thesis 'That a Thing Can Only Come into Being from Another Thing'*,⁶³ and some passages of *Refutation of Galen's 'On Time and Place'*.⁶⁴ Silvia Fazzo has been critical of these Arabic

56 Ibn al-Nadīm (d. AD 995), *Catalogue (Fihrist)*, 7. 3, tr. Dodge (1970) 11.681 and Nutton (1984: 319, n.26).

57 It was also held by modern scholars that Galen and Alexander both followed the teaching of the Peripatetic Herminus, pupil of Aspasius; on this discussion, see Thillet (1984: IX, n.3; and XLVI, n.2); see also Fazzo (2002: 116–17).

58 Abū Sulayman al-Sijistānī, *Vessel of Wisdom (Ṣiḥwān al-ḥikma)*, ed. Badawi (1974) 86; tr. Nutton (1984: 320–1).

59 On Galen's agnosticism, see Pietrobelli (2013).

60 Donini (1970–1; 1974: 148–73; 1982: 226–8, 232); Todd (1977); Accattino (1987); and Kupreeva (2004).

61 For a list of Alexander's treatises in Arabic, see Dietrich (1964: 93–100); van Ess (1966); Fazzo (2002: 123–4).

62 Pines (1961); Rescher and Marmura (1965).

63 On this treatise preserved in the Scorialensis ar. 794, see Altmann and Stern (1958: 73, n.2).

64 On the tract on time preserved in the manuscript Tashkent 2385 (fols 389r–390r), see Badawi (1971: 19–24); Sharples (1982: 72–8).

texts, which according to her, were forged by Arab scholars in the tenth century. According to Fazzo, they are not original testimonies of actual criticisms of Galen made by Alexander at the turn of the third century, but later constructions with a specific purpose in mind.

In the wake of the craze for Galenic texts generated in Baghdad by Ḥunayn ibn Ishāq (d. AD 873), there was an Aristotelian reaction against Galen and medical thought in the tenth century.⁶⁵ According to Fazzo, Alexander's stature was used to create an ancient guarantor to support the new anti-Galenic clan in the Arab world. Fazzo's ingenious interpretation seems radically revisionist. It is true that all these short passages do not constitute complete treatises by themselves, so one must assume that they were excerpted from lost commentaries by Alexander. Fazzo is right in thinking that such an anti-Galenic textual collection was made for a specific purpose, but one cannot uncritically concur with her dismissal of the authenticity of the passages. Rather, Fazzo's hypercriticism must be tempered. There is additional proof of Alexander's criticism in Greek.

The sixth-century Neoplatonic philosopher Simplicios also attests to a conflict between Alexander and Galen, about a passage of Aristotle's *Physics* (7.1, 242a38–45).⁶⁶ Marwan Rashed has examined the Byzantine marginal scholia in some manuscripts of Aristotle's *Physics* derived from a lost commentary of Alexander on *Physics*.⁶⁷ These scholia on *Physics* (7.1) are completely independent of Arab tradition, and they bear testimony that the exegete was tackling Galen in his commentary on *Physics*. Alexander's criticisms of Galen are not a construction from tenth-century Arab thinkers: Greek tradition strengthens what can be learned from the Arab tradition and confirms Alexander's ambivalent stance towards Galen. With the two sophists Pollux and Athenaeus, one can explore Galen's social web, but in the eyes of the philosopher Alexander of Aphrodisias, Galen appears as a direct rival whose philosophic skills are acknowledged. Alexander's Galen is no longer mundane; he is an authoritative competitor in the arena of truth, judged by his writings and incriminated for his attacks on Aristotle.

3 Galen and the Heretics

From Rome to Athens, from the imperial court to Athenian schools, Galen's glory spread beyond the circles of pagan power to other segments of the

⁶⁵ See the critical literature described by Gutas (1998: 153); Fazzo (2002: 118).

⁶⁶ Fazzo (2002: 134–5).

⁶⁷ Rashed (2011: 424–6).

population and geographical areas. One can find echoes of Galen's books in the works of Christian authors, two of whom were subsequently condemned as heretics by the church.

Eusebius of Caesarea began his life in the second half of the third century and could not have known Galen personally. In his *Church History* (5.28),⁶⁸ however, he evokes a Christian heretical sect influenced by Galen's thought and founded by one of his contemporaries, Theodotus of Byzantium,⁶⁹ who arrived in Rome during the time of Bishop Victor (AD 189–99). He worked as a *skyteus* (leather worker and cobbler) and apparently founded a Christian sect that practiced what would come to be called Adoptionism or Monarchianism. He claimed that Jesus was born a man to the Virgin Mary, was adopted by God, and became a deity only after the Resurrection. Eusebius mentions two disciples of Theodotus, Asclepiodot and another Theodotus, who was a banker and took over the sect under Bishop Zephyrinus (c. AD 199–217). According to the *Little Labyrinth*, a treatise usually attributed to Hippolytus and used by Eusebius in his historical account,⁷⁰ these Theodotians bowed down before Galen:

They have not feared to corrupt divine Scriptures, they have nullified the rule of ancient faith, they have not known Christ, they do not inquire what the divine Scriptures say, but industriously consider what syllogistic figure may be found for the support of their atheism. If anyone adduced to them a text of divine Scripture they inquire whether it can be put in the form of a conjunctive or a disjunctive syllogism. They abandon the holy Scripture of God and study geometry, for they are of the earth and they speak of the earth and him who comes from above they do not know. Some of them, forsooth, study the geometry of Euclid and admire Aristotle and Theophrastus. Galen perhaps is even worshipped by some of them ... For this cause they did not fear to lay hands on the divine scriptures, saying that they had corrected them. And that I do not calumniate them in saying this any who wish can learn, for if any be willing to collect and compare with each other the texts of each of them, he would find them in great discord, for the copies of Asclepiades do not agree with those of Theodotus, and it is possible to obtain many of them

68 On this passage, see Schöne (1939); Walzer (1949: 75–86); Lampe (2003: 344–8); or Schlange-Schöningen (2003: 252–4).

69 On this sect, see Hippolytus, *Refutation of All Heresies*, 7.35, ed. Marcovich (1986) 318–19; and Epiphanius, *Panarion*, 54, ed. Holl and Dummer (1980) 317–23; see also Bertrand (1987).

70 See Nutton (1984: 316, n.7).

because their disciples have diligently written out copies corrected, as they say, but really corrupted by each of them.⁷¹

Other admirers of Galen are known today through Eusebius' references to Christians who lived in Rome when Galen did. According to his account, there were two individuals of the same name, i.e. Theodotus: the master was a shoemaker and the disciple was a money changer. Theodotus the shoemaker was 'very learned',⁷² and Roman bankers could possess an extensive fortune, like the Chryseros of Apuleius.⁷³ Their profession did not prevent them from becoming members of the *bonne société*. Eusebius thus points out another layer of Roman society interested in Galen – a circle of Greek Christians living in Rome. The mention of Theodotus the shoemaker and Theodotus the banker, takes us from the circle of pagan high officials of the empire in which Galen gravitated to reach a Roman bourgeoisie of Greek Christians originating from the East.

The inclusion of Galen among the Christian authorities is surprising. The Greek verb *proskyneitai*, qualifying the Theodotians' attitude towards him, is meaningful. Some of them used 'to prostrate before' him. This should not be taken literally, however, since Eusebius' source is a pamphlet employing irony. Moreover, the anonymous author of the pamphlet uses the modal adverb 'perhaps' (*isōs*) to mitigate his impetus. Here again, however, Galen is considered by his contemporaries to be a philosopher involved in syllogisms and logic. The Theodotians ranked him higher than Aristotle and Theophrastus. The anonymous description of the Theodotian method applied to sacred scriptures is strongly reminiscent of Galen's. The Pergamene physician recommended the study of logic and apodictic demonstrations to neophytes before they began their training in medicine. Galen aimed to construct medical science through geometrical demonstrations based on axioms and theorems on the model of mathematics.⁷⁴ Galen's influence is hidden in the shadow of the Theodotians' ambition to base the truth of the Holy Scriptures on demonstrative methods.

71 Eusebius, *Church History*, 5.28.13–17, ed and tr. Lake (1926) 1.520–3. On this passage, see Schöne (1939); the bibliographies given by Nutton (1984: 316, n.8) and by Barnes (2002, repr. 2012: 11, n. 20); and Lampe (2003: 344–8).

72 Epiphanius, *Panarion*, 54.3, ed. Holl-Dummer (1980) 317.13–14 and 54.6, ed. Holl-Dummer (1980) 318.9: 'ἔνεκεν τῆς πολυμαθείας, ὅτι ἀνὴρ πολυμαθής'.

73 Apuleius, *Metamorphoses*, 4.9. On the sociology of the Theodotians, see Lampe (2003: 344–5).

74 See Lloyd (2005); Pietrobelli (2009).

Galen knew the Christians.⁷⁵ Arabic sources transmit a passage from Galen's lost *Summary of Platonic Dialogues*, in which he speaks of the Christians in a rather favourable way. In Galen's view, the Christian sect adopted the way of life of philosophers in their refrain from sexual intercourse, self-control in matters of food and drink, pursuit of justice, and fearlessness of death. They could have been regarded as genuine philosophers had they not derived their faith from parables and miracles. Theodotus' undertaking may have been a reply to such a Galenic accusation,⁷⁶ at a time when the Christians were attempting to affirm their position among the Greek *paideia* and to build a Christian philosophy.

From this perspective, Galen was a model of logical methods and also a teacher of textual exegesis. Hermann Schöne, Richard Walzer,⁷⁷ and more recently Peter Lampe⁷⁸ have examined Galen's influence in the second part of Eusebius' excerpt. The Theodotians adapted Galen's textual criticism to the sacred Scriptures, comparing the different copies to obtain a trustworthy text. Like Galen commenting on Hippocrates and Plato, they established a critical edition of the commented text before commenting on it. They approached the Holy Scriptures using the same pagan philological tools as Alexandrian scholars did with Homer, Hippocrates, and Plato. Quite a lot about Galen's philological practices is known,⁷⁹ and his corpus is the major source on the art of correcting and editing texts in antiquity.

The 'very learned' Theodotus of Byzantium and his successors must have known Galen by reputation, through his books or personally through his activities in Rome. Galen's presence is tangible in their logical methods and in their text criticism to the extent that even their dogma can be said to have been established based on Galen's need for truth. The Theodotians have been viewed as disrespectful and deviant in their two-fold attempt to rationally explain Christian belief and to correct biblical texts.

75 On Galen and the Christians, see Walzer (1949: 15–16 and 87–98); Gero (1990); Blum (1993–4); van der Eijk (2014).

76 This thesis is supported by Schöne (1939: 262).

77 Schöne (1939); and Walzer (1949: 85): 'here can be no doubt, in my view, that the attitude of Theodotus, though directed towards a different object, is quite cognate to the critical method used by Galen while commenting Hippocrates and Plato'.

78 Lampe (2003).

79 On the Galenic philology, see Bröcker (1885); Manetti and Roselli (1994); Hansen (1998); Roselli (2012); Montanari (2015).

4 Galen in Alexandria: Clement and Origen

In addition to Athens and Rome, Galen's renown can be traced in the third intellectual capital of the Roman Empire, Alexandria, which was also for centuries a centre for medical studies. Clement of Alexandria (c. AD 150–c. 215) is another Christian thinker who laboured to present Christianity in a cloak of philosophy. Like Galen had, to recruit young people to study medicine, Clement wrote his own *Protrepticus*, exhorting Greek pagans to adopt Christianity. His *Pedagogus* is full of medical remarks, as noted by Henri-Irénée Marrou⁸⁰ and later by Martin Pujiula.⁸¹ Also like Galen, Clement displays an acute interest in dietetics, nutrition (2.1 and 2.2), sleep (2.9), sexual activity (2.10), baths (3.5 and 3.9), and small ball games (3.10). Pujiula has identified many points in common between Galen and Clement: both declare hot baths useless for young people;⁸² they refer to a similar list of bodily activities;⁸³ the small ball game is their preferred sport.⁸⁴

Clement's dietetics is today expounded upon in comparison to Galen's. Is it because Galen is the primary source for the history of ancient medicine or because Clement read Galen? Most prudent scholars would speak of common medical sources or of a zeitgeist, but recent discoveries about book 8 of Clement's *Stromata* should lead to more affirmative thinking about his direct knowledge of Galenic texts.

Nothing authoritatively proves that Clement read Galen's medical text in writing his *Pedagogus*, but Matyáš Havrda has shown convincingly that Clement modelled his own doctrine of demonstration on the lost Galenic *On Demonstration*,⁸⁵ which consisted of 15 books.⁸⁶ To construct his own Christian philosophy, Clement borrowed methods and examples from the logical treatise of Galen. In explaining Galen's success among the Christians, Havrda wrote, 'Their choice of Galen may have been motivated by the fact that he wrote the most well-known, most elaborate and most accessible account of the topic [i.e. logic] that was available at that time'.⁸⁷ Havrda also suggests that Clement's endeavour, like that of Theodotus, could have been roused

80 See Marrou and Harl (1960: 78–9). For instance, Marrou and Harl annotated a passage on lactation with Galenic references.

81 Pujiula (2006: 168–230).

82 Pujiula (2006: 195–6).

83 Pujiula (2006: 203–4).

84 Pujiula (2006: 198–9); on the small ball game, see Boudon-Millot (2015).

85 See Havrda (2011).

86 On this lost treatise see also Chiaradonna (2009); Havrda (2015); Koetschet (2015).

87 See Havrda (2011: 374).

by Galen's objections against the Christians. Following this hypothesis, both Theodotus and Clement would have acquired the demonstrative skills of their opponent before replying to him. If Clement read Galen, what about Origen, Clement's successor at the Catechetical School of Alexandria? Did he as well?

Galen's presence in the Origenian corpus is more discreet and diffuse than in Clement's works. The Pergamene philosopher is never mentioned in the preserved corpus. Origen flourished in the first half of the third century, mostly after Galen's death. In a short paper, Grant became a pioneer in searching for clues of Galenic readings by Origen. According to Grant,⁸⁸ Origen alludes to Galen's *On the Function of the Parts of the Body* in a fragment of his lost, thirty-ninth homily on Jeremiah, included in the *Philocalia*:

Each member of our body has been made by God the Artisan (*technitēs*) for a particular function, but it is not given to all to know what is the power and utility (*chreia*) of each member, even the least part. But those physicians who practise dissection can say for what use each part, even the least, has been made by Providence (*pronoia*).⁸⁹

Origen is trying to define the role of the exegete by means of two conceits. The exegete displays himself as an anatomist, who can interpret every part of the text, but also as a pharmacologist, expert in the knowledge of the spiritual action of words, like the physician is knowledgeable of the healing power of plants. Anatomy and pharmacology were, for certain, part of the competences of the physicians with whom Origen might have socialised in Alexandria. In the context of the definition of textual exegesis, however, these two references to an anatomist and a pharmacologist could implicitly refer to Galen, whose philosophical and anatomical *On the Function of the Parts of the Body* enjoyed great success in Rome. The diffusion of his tremendous collections of pharmacological recipes must have fascinated his contemporaries.

Grant also argued that Celsus, the Epicurean philosopher and target of Origen's *Against Celsus*, is the same philosopher mentioned by Galen in *On My Own Books*.⁹⁰ Such an identification is a bit questionable, but Stephen Benko has noticed that Galen and Origen's Celsus employ the same criticism against the Christians.⁹¹ Both Galen and Celsus were contemptuous of the Christian

88 Grant (1983: 535): 'this can hardly refer to anything but Galen's treatise *De usu partium*'.

89 Origen, *Philocalia*, 10.2, ed. Harl (1983) 368 = Origen, *Homilies on Jeremiah*, 39, ed. Husson-Nautin (1977) 11.374; tr. Grant (1983: 534).

90 Galen, *Lib. Prop.*, 19.3, ed. Kühn (1830) XIX.48 = ed. Boudon-Millot (2007) 173.3; on the problem of such identification, see Boudon-Millot (2007: 173, n.3).

91 Benko (1984: 157–8).

faith's lack of logic. Ilaria Ramelli has drawn further parallels between Galen and Origen.⁹²

It is difficult to imagine that Origen ignored the writings of the great and radiant mind of Galen. For Origen, Galen was one of the leading thinkers of the previous generation. He had written about Christians in *On the Function of the Parts of the Body*, and he had defied them in the philosophical arena. It seems that, as Walzer wrote, 'Galen's writings now formed part of the syllabus of Christian higher education'.⁹³ In this respect, one would expect Galen also to be a paragon of textual exegesis who modelled Origen's own practice.

Galen and Origen were unquestionably the most productive authors of their time. Much of Origen's production is lost or available only through Rufinus' Latin translations. Both constructed a huge corpus, using the same method of production. Both dictated their books to a team of tachygraphers. Galen is known to have used a crew of scribes who could record his speeches verbatim in shorthand and then transcribe these stenographic notes into clear hand-written versions.⁹⁴ Origen was sponsored by Ambrosius, a wealthy imperial high official who had first been his pupil in Alexandria.⁹⁵ Bewitched by Origen's erudition and loquaciousness, Ambrosius urged his master to write commentaries on the books of the Bible. For many years, first in Alexandria and later in Caesarea, Ambrosius appointed a team of tachygraphers and calligraphers to convert Origen's oral exegesis on the sacred scriptures into written text. Origen, like Galen, must have adhered to a busy daily schedule. One part of his day was devoted to oral commentary and dictation, and another was devoted to reading to prepare the next day's commentary, while calligraphers engaged in transcribing the morning's stenographic notes.

Such massive production and Galen's celebrity generated tampering. As noted, Galen himself testifies to his own name and authority being usurped.⁹⁶ From Caesarea, Origen wrote a letter to his Alexandrian friends to warn them on the falsification of his own works by heretic enemies.⁹⁷ For different reasons, both authors experienced the same woes. They shared a common regimen of book production along with its setbacks. So far, nothing implies a Galenic influence on Origenian exegetical practice.

92 Ramelli (2012: 322).

93 Walzer (1949: 97).

94 Galen, *Aff. Pecc. Dig.* 9.9, ed. Kühn (1823) V.48 = ed. De Boer (1937) 32.15–18.

95 Eusebius, *Church History*, 6.23.1–2, ed. Lake (1932) II.68.

96 As mentioned in the introduction above.

97 Rufinus, *On the Falsification of the Books of Origen*, 6–7, ed. Amacker and Junod (2002) 296.

In this respect, Galen and Origen have many points in common. As commentators, they define in their prologues the *schemata isagogica* that would become canonical in the later Alexandrian tradition,⁹⁸ and they use the same method of exegesis, *Homerum ex Homero*,⁹⁹ inherited from the Alexandrian philologists. Like them, they used diacritical signs to punctuate their manuscripts,¹⁰⁰ and to point out variants between the different versions.¹⁰¹ Before commenting on Hippocrates or Plato's books, Galen would gather different copies or editions of the text to establish his own critical edition. In his philology, Galen was conservative, defending himself before introducing unconsidered conjectures.¹⁰² Origen adopted similar ecdotical principles. Like Galen, he condemned the boldness of scribes or scholars making bad corrections to texts.¹⁰³ Neuschäfer has compared the philological vocabulary and methods used by Origen to Galen's.¹⁰⁴ He acknowledges Origen's debt to the Alexandrian heritage, but speculates on which go-betweens perpetuated this philological tradition during Origen's training, suspecting a philological manual summarising the teachings of Zenodotus, Aristophanes of Byzantium, and Aristarchus.¹⁰⁵

The evidence is too poor to evaluate Galen's role in Origen's philological theory and practice. Nevertheless, the Theodotians have shown that Galen's philological techniques on pagan texts were imitated and applied to Christian texts. Even for Christians, Galen was an example in text criticism. Origen's approach seems to continue the Theodotian endeavour of establishing the sacred texts on firm textual ground and might have been inspired by Galen when he carried out his awesome and ingenious critical edition of the Old Testament in his *Hexapla*.¹⁰⁶

98 On these *schemata*, see Mansfeld (1994); on Origen's use of them, see Neuschäfer (1987: 57–84). The *schemata isagogica* are preliminary questions discussed about the commented text: (1) theme, aim or purpose; (2) its position in the corpus; (3) its function; (4) explanation of the title; (5) its authenticity; (6) its division into chapters or sections; and (7) to what part of the discipline the treatise belongs.

99 On this method, see Schaublin (1977); Manetti and Roselli (1994: 1564–5, n.125); Mansfeld (1994: 148–9); Neuschäfer, (1987: 276–85).

100 Galen, *Ind.*, 14, ed. Boudon-Millot and Jouanna (2010) 6.7–18.

101 In his *Hexapla*, Origen marked with an obel the passages from the LXX that were absent from the Massoretic version. In his critical edition of the LXX, he adds some passages from the Massoretic version, noting an asterisk in the margin to signal their absence in the manuscript tradition; see Munich (1995).

102 See Bröcker (1885: 417–21); Manetti and Roselli (1994: 1565).

103 On Origen's conservatism, see Neuschäfer (1987: 85–103) and Munich (1995).

104 Neuschäfer (1987: 133–5).

105 Neuschäfer (1987: 129).

106 On the *Hexapla*, see Dorival (2011).

What emerges when one tries to define Galen in the eyes of his contemporaries is an unexpected picture. For audiences today, tradition has shaped Galen as a physician who was a philosopher in his spare time; he belongs to the history of medicine. To his contemporaries, however, at least according to the rare remaining testimonies (of Alexander, Theodotus, and Clement), Galen seems primarily to have been a philosopher and model for logic. The historiographical distortion between the Galen of today and the Galen of his time results from textual transmission: the Galenic *On Demonstration* is still missing, and Galen's numerous commentaries on Aristotle, Plato, Chrysippus, and Epicurus are definitely lost. His medical works, however, are preserved in thousands of pages. Such an optical illusion should not prevent reconsideration of Galen's place in the history of philosophy. For his contemporaries, Galen was a philosopher, but also an exegete. For Christians, his critical and exegetical work on Hippocrates, Plato, and Aristotle, among others, provided methods to be applied to the Holy Scriptures.

In light of the collated evidence, scholars have two choices: extreme circumspection in considering the facts as coincidences indicative of the time, or reappraisal of Galen's place in the intellectual life of his epoch. For Athenaeus, Alexander, Theodotus, and Clement, Galen was a prominent philosopher. He embodied the new Aristotle or Plato. Athenaeus, Alexander, Theodotus, and Origen may have been readers of Galen's commentaries. In Alexandria, the content of Galen's *On the Function of the Parts of the Body* was known by Origen, and his *On Demonstration* was read and used by Clement. A papyrus from the third century (P. Monac. 2.43) also confirms that his theoretical and philosophical *On the Doctrines of Hippocrates and Plato* was copied and read in Roman Egypt.¹⁰⁷ Beyond Greek-speaking lands in the third century, Galen's writings reached the province of Mauretania, in present-day Algeria. Quintus Gargilius Martialis (d. AD 260), in his *Medicines Based on Vegetables and Fruits*, abundantly quotes Galen's *On the Capacities of Foodstuffs*.¹⁰⁸ Gargilius Martialis belonged to the equestrian order, and after a military and political curriculum, he was put in charge of the Roman colony of Auzia. It is surprising that the first attestation of the medical utilisation of the Galenic corpus originates in North Africa, from Latin writings, and moreover from a politician.

From the fourth century onwards, the medical authority of Galen is halloed, by two monuments in particular. The pagan Oribasios, Emperor Julian's (r. 361–3) personal friend and physician, compiled a compendium of Galen's works in Gaul at the request of the emperor. Oribasios' Galenic compendium

107 On this papyrus, see Manetti (1981) and Nutton (1984: 318).

108 Maire (2002: LVI).

was later completed by passages from the best ancient physicians to form his partly extant *Medical Collections*, in seventy books. With this compilation approach to the huge Galenic corpus, Oribasios initiated the medical genre of the epitome, which became a standard in Byzantine medical literature.¹⁰⁹ Nemesios, bishop of Emesa in Syria, contributed by incorporating Galen's medical thought in a Christian context. In *On the Nature of Man*, Nemesios calls Galen 'the marvellous physician'.¹¹⁰ As early as the fourth century, Galen had become the medical authority who would prevail for a millennium during the Middle Ages.

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109 On Oribasios and Galen, see Bouras-Vallianatos (Chapter 2) in this volume.

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Galen in Late Antique Medical Handbooks

Petros Bouras-Vallianatos

Studying the medical literature that was produced from the fourth to the seventh century AD is central to an understanding of how Galen's corpus impacted on the production of medical works, and to some extent on medical practice, during this early period as well as later, through the reception of the late antique medical literature itself in subsequent periods and in different intellectual environments. The medical literature of this period can be divided into two main categories, each corresponding to the basic purpose the texts were intended to serve. First, the fifth to the seventh century in particular was a period marked by the production of texts of a clearly didactic nature, such as commentaries and summaries, which were connected with the teaching of medicine. These texts aimed to complement the study of the Hippocratic and Galenic works that formed the Alexandrian curriculum.¹ Although only a small proportion of these texts survive today in the original Greek, others are accessible through Arabic translations.² Second, this period also saw the production of medical handbooks in Greek and Latin. These works, although differing in thematic arrangement, levels of expertise, and length, all share a common purpose, viz. to assist their readers in consulting practical recommendations, mainly diagnostic and therapeutic, from a variety of sources in the accessible format of a single work. This chapter explores the use and adaptation of the Galenic corpus in the hands of late antique medical compilers. It is divided into two main sections dealing with Greek and Latin authors respectively.

1 The Greek Tradition

1.1 *Oribasios, Aetios of Amida, and Paul of Aegina*

In Owsei Temkin's own words, 'Oribasios marks the *terminus a quo* we can safely speak of Galenism in medicine', emphasising the dependence of the late

1 On this group of texts, see Garofalo (Chapter 3) in this volume. All translations are mine. The exact dates of medical authors are rarely known, and the dates cited are approximations following Leven (2005).

2 See the new study by Overwien (2018). There are also surviving commentaries in Latin, most probably produced by scholars based in sixth-century Ravenna; see Palmieri (2001).

antique medical system on Galen's theories and practices.³ Active in the second half of the fourth century, Oribasios is the author of four works, in which a prominent role is indeed given to Galen's corpus almost a century and a half after the latter's death, attesting to his growing importance. The efforts of Oribasios must have been crucial in establishing Galen's works as the main sources for the composition of medical handbooks in Late Antiquity, although, as we will see below, the surviving material often reveals a remarkable pluralism with regard to the selection and use of the available medical sources.

Oribasios was a personal friend and physician of the Emperor Julian (r. 361–3), with whom he seems to have become acquainted during the latter's exile in Asia Minor; he accompanied Julian on the Persian expedition (363) and looked after him until his death.⁴ He wrote a synopsis of Galen's works that does not survive today but, thanks to the Byzantine scholar and patriarch Photios (810–93), its proem is preserved in the latter's lengthy *Bibliotheca*.⁵ From it we learn that this enterprise was undertaken at Julian's behest. Oribasios' task was to abridge (*syntemein eis elatton*) and to create a synopsis (*synopsis*), to help users, who were not able to delve into the long and very detailed Galenic corpus (*adynatōs echousi tous kata diexodon*), to gain some Galenic knowledge in a short time, and also to assist those who had acquired the requisite practical skills to quickly be reminded of the essentials (*en brachei anamnēseōs tōn anagkaiotatōn genomenēs*) in an emergency (*chreias epeigousēs*).⁶ What Oribasios was attempting to do had a significant practical purpose: to provide physicians with easily accessible material for immediate consultation. This purpose becomes clearer in looking at Oribasios' surviving works, i.e. *Medical Collections*, *Synopsis for Eustathios*, and *For Eunapios*.

Each work is shaped by the particular purpose and audience for which it was intended.⁷ *Medical Collections* is a massive work written at Julian's request and originally consisting of seventy books, of which almost one-third have survived. *Synopsis for Eustathios*, in nine books, was written for Oribasios' son and can be seen as an abridged version or an autoepitome of the *Medical Collections* with the specific aim of providing instructions to those who are

3 Temkin (1973: 64).

4 See de Lucia (2006: 21–9).

5 On Photios' discussion of Oribasios' works, see Marganne (2010: 516–18). See also Stathakopoulos (Chapter 7) in this volume, who discusses the *Bibliotheca* in the framework of Galen's reception in non-medical Byzantine sources.

6 Photios, *Bibliotheca*, Codex 216, ed. Henry (1962) 111.131–2.

7 On late antique medical compilations in the framework of ancient and late antique summaries and compilations of technical works, see the recent overview by Dubischar (2016: 432–5).

travelling or are facing an emergency.⁸ In *For Eunapios*, Oribasios again draws heavily on the *Medical Collections*, but in this case the aim was to provide brief recommendations to his friend, the sophist Eunapios, a *philiatros*, that is an intellectual with a basic knowledge of medicine, but not a physician himself.⁹ In tracing and attempting to understand Galen's presence in Oribasios' work, I will focus on the *Medical Collections*.

Oribasios himself calls his work a collection (*synagōgēn*) of all the available knowledge that is useful for the purpose of medicine (*telos tēs iatrikēs*).¹⁰ In fact, the arrangement of topics in the surviving books shows a meticulously comprehensive treatment of a large number of topics, including dietetics, pharmacology (simple and composite drugs, with a separate section on purgatives), bathing, anatomy, treatment of inflammations, ulcers and tumours, orthopaedics, and invasive surgery (mainly hernia). With the exception of Galen, who is singled out as the most important medical authority, Oribasios was not eager to name his sources in the proem.¹¹ Indeed, the Galenic corpus receives the lion's share of the available space. However, as Roberto de Lucia has observed, Oribasios often supplemented his work with excerpts from other authors, in an attempt to complement Galen's account when it is deficient on a particular topic. For example, book 24 mainly consists of passages from *On the Function of the Parts of the Body* and *On Anatomical Procedures*, with the occasional addition of small excerpts from other Galenic works, such as *On the Organ of Smell*, together with a chapter by Soranus (second half of the first century/early second century AD) on the female genitalia.¹² On another occasion, in book 1, Oribasios combined material from more than one Galenic treatise on the same topic (e.g. on grains) in such a way that one Galenic text (*On Good and Bad Humours*) complements another (*On the Capacities of Foodstuffs*). He also included an excerpt from Athenaeus (first century BC or c. 50 AD), for a discussion on the impact of climate on the quality of seeds, something not found in any surviving Galenic treatise.¹³ Apart from Galen, the sources most frequently cited are Dioscorides (first century AD) and Hippocrates, followed in descending order by Antyllus (ca. first half of the second century AD),

8 Oribasios, *Synopsis for Eustathios*, pr., ed. Raeder (1926) 5.7–13.

9 Oribasios, *For Eunapios*, pr., ed. Raeder (1926) 317.2–25. On *philiatroi*, see Luchner (2004). One prominent ancient *philiatros* was Glaucon, to whom Galen dedicated his *Therapeutics to Glaucon*; on this, see Bouras-Vallianatos (2018: 180–3).

10 Oribasios, *Medical Collections*, pr., ed. Raeder (1928) I.1.4.3–9.

11 Oribasios, *Medical Collections*, pr., ed. Raeder (1928) I.1.4.13–16.

12 De Lucia (2006: 28–9).

13 De Lucia (1999a: 481–2). See also Scarborough (1984: 221–2), who discusses how Oribasios combined Galenic accounts on simple drugs with accounts by Dioscorides.

Rufus (c. AD 100), Heliodorus (ca. first century AD), Herodotus (first century AD), Zopyrus (c. 100 BC), Soranus, Archigenes (second half of the first century – first half of the second century AD), Athenaeus, Dieuches (third century BC), Diocles (c. first half of the fourth century BC), and Philagrius (first half of the fourth century AD).¹⁴ In many cases, Hippocrates is cited second-hand through Galen.¹⁵

Also of note, in some cases Oribasios preferred another source to the Galenic account on a certain subject. De Lucia points out a case in which Oribasios included a passage from Antyllus related to the usefulness of exercise, especially running, to one's health,¹⁶ without providing supporting Galenic material on the subject. Given Galen's criticism of excessive physical exercise (with the emphasis on running), which he says produces an imbalance in the bodily state,¹⁷ such an omission might not be coincidental. Thus, Oribasios was the first author to amalgamate Galenic works with those of other ancient physicians, complementing his master's ideas even with the work of authors whom Galen clearly disparaged in his own works, such as Archigenes and Athenaeus.

The second author is Aetios, a native of Amida,¹⁸ who lived in the first half of the sixth century. There is some debate over whether he was ever at the court of Constantinople,¹⁹ but there is no evidence of this in any surviving sources, including Aetios' own text. Similarly, the appellation *komēs tou Opsikiou* found in some late manuscripts is dubious.²⁰ His medical treatise, usually called *Libri medicinales* or *Tetrabiblos*, consists of sixteen books covering the following topics: pharmacology, dietetics, surgery, prognostics, general pathology, fever and urine lore, ophthalmology, cosmetics, dentistry, toxicology, gynaecology, and obstetrics. Out of the sixteen books, only the first eight

14 De Lucia (1999a: 484–5). In the index of Raeder's edition (1933: II.11.308–35) of Oribasios' surviving corpus, although it is not entirely comprehensive (cf. de Lucia, 1999: 484, n.24), the references to the Galenic corpus take up sixteen pages compared to just two and a half pages for Dioscorides and one page for the Hippocratic corpus.

15 De Lucia (1999b: 448–50).

16 De Lucia (1999a: 487–8). Oribasios, *Medical Collections*, 6.24, ed. Raeder (1928) I.1.179.28–180.20.

17 Galen, *Parv. Pil.*, 3, ed. Kühn (1823) v.906.3–5 = ed. Marquardt (1884) 98.21–3. Cf. König (2005: 274–91). In his *Exhortation to the Study of the Arts*, 9–14, ed. Kühn (1821) I.20.4–39.10 = ed. Boudon (2000) 100.1–117.18, Galen attacks athletic excess, since he believed that only moderate exercise could produce bodily health and virtue in the soul; on this, see Xenophontos (2018: 76–9).

18 Amida, a Mesopotamian city on the Tigris River, modern-day Diyarbakir, in Turkey.

19 Cf. Scarborough (2013).

20 Cf. Hunger (1978: II.294).

have been published in a modern critical edition. Some parts of the remaining books remain unpublished or can only be accessed in questionable editions.²¹

The work lacks a programmatic statement on the author's intentions such as that found in Oribasios' works, but some manuscripts transmit a small paragraph naming some of Aetios' sources, including Oribasios' works in addition to those of Galen, Archigenes, and Rufus.²² On the whole, Aetios was noticeably less dependent on Galen than was Oribasios. Among the most frequently cited Galenic texts are: *On the Capacities of Simple Drugs*, *On the Composition of Drugs According to Kind*, *On the Composition of Drugs According to Places*, *On the Preservation of Health*, *On Affected Parts*, and *Therapeutics to Glaucon*, with occasional mentions of other treatises such as *On the Different Kinds of Fevers*, *On Crises*, and *On Treatment by Bloodletting*.²³ Interestingly, Oribasios is often mentioned as one of Aetios' sources, alongside frequent references to Dioscorides, Hippocrates, Antyllus, Rufus, Soranus, Archigenes, Herodotus, Philumenus (second/third century AD), and many other minor authors,²⁴ including a certain Andrew the Count (*komēs*) and a female author called Aspasia.²⁵ There are also recipes attributed to Jewish prophets, Egyptian kings, and Christian apostles and bishops.²⁶ Compared to Oribasios, Aetios sometimes seems less dependent on Galen for his citations of Hippocratic material.²⁷ Aetios' heterogeneous assemblage of sources, reflecting various therapeutic trends of his day, looks even more dynamic in light of the considerable number of references to the use of amulets made of either mineral, vegetal, or animal ingredients included indiscriminately in his discussion of 'mainstream' therapeutics.²⁸ As we will see below, Alexander of Tralles also made use of this kind of material. Although Galen made a few references to amulets, he mostly rejected their use.

21 Garzya (1984).

22 Olivieri, *Tetrabiblos*, pr., ed. Olivieri (1935) I.10.1–4.

23 It is worth noting that Aetios often reproduces the first-person personal pronouns of his sources, thus making it impossible to differentiate between the work of the original authors and that of the excerptor; see Debru (1992). An interesting case related to Aetios' supposed travels to Syria, 2.24 ed. Olivieri (1935) I.164.15ff, and Cyprus, 2.64 ed. Olivieri (1935) I.174.4ff, recently mentioned by Romano (2006: 256). These are not genuine, but reflect quotations from Galen: *SMT*, 10.2.10, ed. Kühn (1826) XI.203.9ff and 10.3.21, ed. Kühn (1826) XI.226.11ff respectively.

24 On Aetios' sources, see Bravos (1974).

25 On Andrew and Aspasia, see Calà (2012b) and Flemming (2007: 270) respectively. See also Calà (2012a: 40–8).

26 See Martelli in Eijk et al. (2015: 203–4); and Calà (2016a).

27 De Lucia (1999b: 450–4).

28 Calà (2016b); and Mercati (1917).

Our next author, Paul of Aegina, practised in Alexandria and probably remained there even after the Arab invasion of 642.²⁹ His only extant work in Greek is a seven-volume manual dealing with dietetics, fevers, and diseases arranged in a *a capite ad calcem* (from head to toe) order, dermatology, bites by venomous animals and antidotes for poisons, surgery and pharmacology. Paul's aim, in contrast to that of Oribasios and Aetios of Amida, was to provide an abridged version of the most up-to-date medical knowledge for immediate consultation that could be carried everywhere by physicians in the way contemporary lawyers carried vade mecum of legal synopses.³⁰ In his proem, Paul recalls Oribasios' wording, referring to his work as a collection (*synagōgēn*), and makes a nice digression to comment on the works of his predecessor, i.e. Oribasios' lost synopsis of Galen's works, *Medical Collections*, and the *Synopsis for Eustathios*. He says that the *Medical Collections* is large and not easy to procure, and he notes that *Synopsis for Eustathios* omitted accounts of many diseases.³¹

The first two books of Paul's epitome are for the most part based on either Oribasios or Galen; *On the Capacities of Foodstuffs* is a main source for book 1, while in book 2 there are quotations from a large number of Galenic treatises, including, for example, *On Critical Days*, *On Crises*, *Therapeutics to Glaucōn*, *On the Different Kinds of Fevers*, and various texts on the pulse. Galen's main pharmacological works (*On the Capacities of Simple Drugs*, *On the Composition of Drugs According to Kind* and *On the Composition of Drugs According to Places*) appear consistently in the next few books along with quotations from his massive *Therapeutic Method*. Perhaps, book 6, dealing with surgery, was the single most influential part of Paul's work.³² In it, Paul often quotes from various now-lost accounts on the subject by authors such as Antyllus and Leonides (c. first century AD), whereas, apart from a few quotations from the *Therapeutic Method*, he rarely mentions Galen. Galen stated in the *Therapeutic Method* that he intended to write a manual on surgery, *Cheirourgoumena*, but he never realised this project.³³

The ways in which Oribasios, Aetios, and Paul integrated parts of the Galenic corpus into their own writings varied. Philip van der Eijk has aptly shown that Oribasios, in incorporating in his *Medical Collections* (book 1, chapter 28) an account on animal meat from Galen's *On the Capacities of Foodstuffs*, managed to condense the Galenic original without omitting any information essential

29 On Paul, see Pormann (2004: 4–8).

30 Paul of Aegina, *Epitome*, pr., ed. Heiberg (1921) 1.3.8–16.

31 Paul of Aegina, *Epitome*, pr., ed. Heiberg (1921) 1.3.24–4.17.

32 Tabanelli (1964).

33 Galen, *MM*, 14.13, ed. Kühn (1825) x.987.13.

to his reader's understanding of the passage. For example, having retained the Galenic statement on the nutritional value of pork ('pork is the most nutritious [meat]'), Oribasios left out the other sentences in which Galen had provided evidence of this by discussing the diet of athletes.³⁴ Aetios (book 1, chapter 121) seems to have followed Oribasios in this regard, although he occasionally varied his approach by, for example, also using brief excerpts from Galen's *On the Capacities of Simple Drugs* at the beginning and end of certain chapters.³⁵ In the case of Aetios, Galen's name also appears in the relevant chapter title ('On meat from Galen'), which could be seen as a user-friendly reference tool for any reader wanting to locate a chapter on a particular topic while leafing through the codex.³⁶ Finally, Paul (book 1, chapter 84) created a dramatically abridged text, including only absolutely essential information, which contains laconic statements on some basic characteristics of the most common kinds of meat (e.g. 'beef gives rise to melancholy'), but omits references to, for example, the meat of bears, lions, leopards, and dogs that had been retained by Oribasios and Aetios. These careful selection processes and re-arrangements of the Galenic material, which might have been influenced by the authors' own experiences, led to the production of easily accessible, abridged lists of Galenic recommendations. The re-arrangement of the Galenic information might sometimes also have functioned as an aid for the readers, helping them to better understand complex theoretical notions. For example, John Scarborough has argued that Oribasios' and Aetios' arrangement of Galenic citations on pharmacology involved a certain amount of clarification of the complex Galenic system of drug classification based on degrees of intensity of the primary qualities.³⁷ Thus, apart from transmitting and promoting their master's advice to their contemporaries, they also gave a practical new twist to Galenic knowledge.

1.2 *Alexander of Tralles and the Early Criticism of Galen*

The sixth-century practising physician Alexander of Tralles requires special attention.³⁸ He came from a prominent provincial family; his father Stephen

34 Van der Eijk (2010: 536–46).

35 Aetios' work may have been based on Oribasios' lost synopsis of Galen's works or some other now-lost compiled manual; see Sideras (1974) on this. Van der Eijk (2010: 545) suggests that Aetios himself could also have been responsible for this re-arrangement. Some more examples are offered by Capone Ciollaro and Galli Calderini (1992); and de Lucia (1996).

36 See de Lucia (1999a: 483, n.20) and MacLachlan (2006: 105–9), who both argue convincingly for the originality of the chapter headings in the works of Oribasios.

37 See Scarborough (1984: 221–6). The Galenic classification was also an issue of debate in the medieval Islamic medical tradition; on this, see Chipman (Chapter 16) in this volume.

38 For an introduction to Alexander of Tralles and his works, see Puschmann (1878: 1.75–87); Guardasole (2006: 557–70); and Langslow (2006: 1–4).

was a physician in Tralles, in Asia Minor, and his brother Anthemios was the architect of the great church of Hagia Sophia in Constantinople. Alexander is the author of three works: *Therapeutics*, *On Fevers*, and *On Intestinal Worms*. His magnum opus, *Therapeutics*, consists of twelve books and deals with the diagnosis and therapy of diseases, often supplemented with details on symptomatology and prognosis, in an *a capite ad calcem* arrangement. Unlike in Paul's work for example, there is no discussion of invasive surgery, because Alexander believed it to be a form of torture rather than a treatment.³⁹ His monograph *On Fevers* provides an extensive treatment of the subject and complements *Therapeutics*. The short preface that precedes *On Fevers* in Theodor Puschmann's critical edition offers insight into the author's intentions:

although I am now an old man no longer able to exert myself greatly, I obeyed and wrote this book, after having collected my experiences (*peiras*) from my many contacts with human diseases.⁴⁰

Alexander presents himself as a practising physician at an advanced age, who is eager to share his knowledge with future fellow practitioners. Unlike the cases with other late antique Greek compilers, Alexander's *persona* is obvious throughout his works, which are pervaded by his frequent interventions in the first-person singular, transmitting an observation or a report derived from his practical experience (*peira*), thus reinforcing the credibility of his advice to his readers.⁴¹ In fact, independence of mind characterises Alexander's writing style, allowing him to often take a critical stance towards Galen's theories.

Alexander adopted an eclectic approach to citing earlier sources, sometimes supplementing them with his own contributions, most conspicuously in the field of pharmacology.⁴² Galen is by far the medical author most frequently cited by name, with excerpts from his works or evidence of influence from works such as *Therapeutics to Glaucón*, *On the Differences of Fevers*, *Therapeutic Method*, *On Affected Parts*, *On the Capacities of Foodstuffs*, and his pharmacological treatises on simple and composite drugs. Hippocrates is the second most-cited author, with Alexander providing a good number of direct citations from the Hippocratic corpus, including works such as *Aphorisms*, *On Nutrition*, and *On Regimen on Acute Diseases*. Archigenes is the third most-cited named source. Alexander also refers to a large number of other authors,

39 Alexander of Tralles, *Therapeutics*, 1.15, ed. Puschmann (1878) 1.575.6–9.

40 Alexander of Tralles, *On Fevers*, pr., ed. Puschmann (1878) 1.298.8–10.

41 Bouras-Vallianatos (2014: 341–2).

42 Scarborough (1984: 226–8); and Bouras-Vallianatos (2014: 344–8).

including well-known ones, such as Erasistratus (c. 315–c. 240 BC), Rufus, and Philagrios, and minor or marginal authors, mostly connected with recommendations for natural remedies (*physika*), such as Asclepiades Pharmakion (c. second half of the first century AD), Xenocrates of Aphrodisias (second half of the first century AD), Straton of Beirut (c. first century AD), Moschion (c. first/second century AD), Didymus (fourth/fifth century AD), and obscure authors, such as Osthanes (c. first century BC).⁴³ Sometimes one can also detect references to Methodism.⁴⁴

Admittedly, the most intriguing part of Alexander's recommendations are the so-called natural remedies.⁴⁵ These can include diagnostic and therapeutic advice related, for example, to the use of amulets and incantations or the use of a gladiator's rag imbued with blood, which had been burnt and mixed with wine. Apart from the above-mentioned authors, Alexander sometimes refers to natural remedies that he had learnt about from people living in the countryside during his trips to Spain, Gaul, Italy, and Corfu. He differentiated these remedies clearly from the other parts of his work with special subheadings. Furthermore, unlike, for example, Aetios, who make no attempt to justify the material he included, Alexander consistently attempted to provide a reason for his decision to use such remedies, although he often appears apologetic about it. On one occasion, Alexander reports that he had learned more about these natural remedies, because some wealthy patients, having refused a painful method of purgation using enemas, had asked him to cure them by means of amulets, probably alluding to other healers who suggested such treatments.⁴⁶ This emphasises another aspect of medical practice that informed Alexander's thinking and approach: the intense competition among various kinds of practitioners that may have forced him to heal using 'every possible means', as he himself honestly admits.⁴⁷ However, he is occasionally eager to confirm to his readers that his experience (*peira*) has proven that many such remedies eventually worked, thus suggesting he actually embraced natural remedies as part of his diverse medical cabinet.

Having briefly sampled Alexander's sources, we can now go on to look more closely at Galen's presence in his works. Alexander very often uses the terms *theiotatos* (most divine) and *sophōtatos* (most wise) in reference to Galen, to

43 For a full list, see Puschmann (1879: II.600).

44 See the references to the notion of *metasyknkrisis* throughout Alexander's work; for example, *Therapeutics*, 1.15, 1.16, and 7.3, ed. Puschmann (1878–9) I.557–5, 1.579.16, and II.253.17–18. For a brief discussion of *metasyknkrisis*, see Rocca (2012).

45 See Guardasole (2004a); and Bouras-Vallianatos (2014: 348–52).

46 Alexander of Tralles, *Therapeutics*, 8.2, ed. Puschmann (1879) II.375.10–16.

47 Alexander of Tralles, *Therapeutics*, 1.15, ed. Puschmann (1878) I.573.1.

convey his admiration for the Pergamene physician.⁴⁸ He also uses the appellation *theiotatos* at times in referring to Hippocrates and does so once in regard to Archigenes; furthermore Didymus, the author of the so-called *Octateuch*, is called *sophōtatos* on one occasion.⁴⁹ Before attempting to provide an explanation for Alexander's decision to elevate Archigenes and Didymus to the same status as Galen and Hippocrates, it is worth dividing the Galenic citations in Alexander's work into three main groups. First are cases in which Alexander has been influenced by Galen but does not refer to him by name. Second are examples in which Alexander provides a reference to a piece of Galenic advice and explicitly mentions his master by name; here Galen is sometimes used as an authority on a certain subject to support Alexander's use of a particular recommendation. Third are the cases in which Alexander does not hesitate to disagree with Galen's views.

In the first group, we can see an example in book 1, chapter 15, of *Therapeutics*, in which Alexander refers to a young patient suffering from epilepsy originating in the lower limbs. His section on symptomatology resembles a Galenic case history from *On Affected Parts*, but Alexander pays special attention to therapy, by introducing the use of a simple drug, pepperwort (*lepidion*), which is not mentioned in the Galenic passage.⁵⁰ This confirms Alexander's eagerness to elaborate on the material already available, supplementing it with the fruits of his rich practical experience in line with his programmatic statement mentioned above.

As regards the second group, I have compared elsewhere Alexander's approach in book 3 of his *On Fevers* with those of Oribasios (*For Eunapios*) and Aetios in using an excerpt from Galen's *Therapeutics to Glaucōn* focusing on the diagnosis and treatment of *leipothymia* (a temporary loss of consciousness).⁵¹ Subsequently, I have shown that, much like Aetios, Alexander divided the Galenic account into sub-sections by providing chapter headings, thus showing a notable concern for his readers. Alexander also provides a direct reference to Galen in the heading preceding his account, calling him 'most divine' and thus emphasising his authority. However, Alexander often adopted a different approach from that of Oribasios and Aetios, by appropriating larger excerpts from the Galenic account and showing a particular interest in those parts

48 Interestingly, the term *theiotatos* was also used by Galen with reference to Hippocrates; on this, see Boudon-Millot (2014).

49 Bouras-Vallianatos (2016: 388).

50 Bouras-Vallianatos (2014: 346–7).

51 Bouras-Vallianatos (2018: 194–7).

dealing with diagnosis and aetiology. Interestingly, on one occasion Alexander, unlike Oribasios and Aetios, supplements the Galenic account with a brief piece of qualitative advice ('and in this way you can diagnose precisely'), in an attempt to emphasise its usefulness to his reader in his own personal way. In another case, in discussing the treatment for inflammation of the auditory canal, Alexander cites the Galenic advice from *On the Composition of Drugs According to Places*, stating: 'Let it happen just as the most divine Galen says. His [i.e. Galen's] statement is as follows: "I do not infuse any drug for those suffering ...".'⁵² Unlike, for example, Aetios, who often reproduces first-person pronouns indiscriminately, here Alexander clearly differentiates Galen's statement from his own account.

Moreover, Galen is sometimes invoked to back up Alexander's view on the efficacy of a certain piece of advice, a sign of Galen's supreme position and authority in the sixth century. For example, in discussing the treatment for phrenitis, Alexander criticises those physicians who administer drugs to the inner parts of the body or topical treatments, such as plasters, at any time, including in cases of indigestion (*aepsia*). In order to substantiate his view, Alexander refers to Galen's corresponding statement in the *Therapeutic Method*, as Alessia Guardasole has pointed out,⁵³ by stating:

the most wise Galen clearly declares that neither plasters nor fomentations should be used at any time, except in those [patients] where the superfluity has not yet spread to the entire body; in all other [patients] the harmful effect is extreme.⁵⁴

The last case I would like to mention here is related to the use of natural remedies. In an attempt to justify the use of incantations, Alexander states:

and the most divine Galen, who did not believe in incantations, after many years and due to his long experience discovered that they might be extremely helpful. Listen to what he said in the treatise *On Medicine According to Homer*. This is what he says: 'And so some believe that incantations resemble old wives' tales, and that was my own belief too until recently; [but] over time, I have been convinced by the visible effects that there is some power in them ...'. Since both the most divine Galen and

52 Alexander of Tralles, *Therapeutics*, 1.13, ed. Puschmann (1879) 11.81.23–5; cf. Galen, *Comp. Med. Loc.*, 3.3, ed. Kühn (1826) x11.603.2–604.8.

53 Guardasole (2004b: 227–8). Galen, *MM*, 11.15, ed. Kühn (1825) x.781.12–14.

54 Alexander of Tralles, *Therapeutics*, 1.13, ed. Puschmann (1878) 1.523.1–5.

many other ancient authors attested to this, what prevents us from presenting these [i.e. the natural remedies] which we have learned by experience and through true friends?⁵⁵

Although Galen is not always as rational as some once believed, his support for incantations in Alexander's sense nonetheless seems unlikely,⁵⁶ and the aforementioned Galenic work should most probably be considered pseudepigraphic.⁵⁷ Consequently, Alexander's favouring of Archigenes and Didymus is not a coincidence. Archigenes, in particular, unlike Galen, is a well-known ancient medical authority who made consistent use of natural remedies.⁵⁸ With regard to Alexander's reference to what is now thought to be a pseudo-Galenic work, it is worth remembering that even later in the Middle Ages, well-educated intellectuals were sometimes not able to differentiate between genuine works by Galen and pseudepigraphic ones.⁵⁹

The last and most significant group is that in which Alexander is clearly at odds with one of his master's views. Although Alexander sometimes mentions Hippocrates' name to invest his own words with authority as he did with Galen,⁶⁰ he never criticised the Koan physician. In one of the most notable instances, Alexander, in discussing the treatment of ephemeral fevers, expresses dismay that Galen recommends using warming agents for those suffering chronic indigestion (*aepsia*):

For if the greasy belching and indigestion happened due to heat, it is then clear that it will be increased if we attempt to use warming agents. And thus, it seems amazing to me how the most divine Galen in his therapeutic treatise [i.e. *Theapeutic Method*] seems to use warming agents. For he allows the antidote made from the three peppers and the one made from quince to be given, and also to apply the [marine] purple with spikenard, wormwood, and mastic to be applied externally to the stomach ... I (*egō*)

55 Alexander of Tralles, *Therapeutics*, 11.1, ed. Puschmann (1879) 11.475.4–15.

56 See, for example, his statement in the *SMT*, 6.pr, ed. Kühn (1826) XI.792.10–793.2.

57 On the pseudepigraphy of this treatise, see Kudlien (1965: 295–9). Cf. Jouanna (2011: 70–1 and n.22).

58 Bouras-Vallianatos (2016: 389–94). See also, Alexander of Tralles, *Therapeutics*, 7.9, ed. Puschmann (1879) 11.319.8–11.

59 See, for example, Petit (2013: 66–8), who informs us that in some manuscripts connected with the circle of the prominent fifteenth-century Byzantine philosopher John Argyropoulos, the long pseudo-Galenic *Introduction, or the Physician* is consistently ascribed to Galen.

60 See, for example, Alexander of Tralles, *Therapeutics*, 6 and 8.2, ed. Puschmann (1879) 11.231.11–13 and 11.377.26–8.

do not believe that these [recommendations] are fitting for those having a warmer disposition; and I say this without intending to disagree, but simply to state what seems true (*alēthes*) to me. For what is true (*alēthes*) must always be preferred above all else. For if the greasy belching and indigestion is caused by heat, I think it is necessary to use the opposite in order to cure it.⁶¹

Alexander refers to a passage in the *Therapeutic Method*, in which Galen discusses the corresponding treatment.⁶² His objection is based on Galen's failure to use a cold agent to counterbalance the chronic heat. Alexander uses a strong first-person singular statement to communicate his opinion to his readers. Using the term 'true' (*alēthes*) lends even greater emphasis to the author's own contribution by attempting to present the Galenic advice as wrong and unreliable.⁶³

Even more intriguing are those cases in which Alexander accuses Galen of not having provided essential information or of giving rather vague advice. We have mentioned before a case in which Alexander cites a piece of Galenic advice in his chapter on the treatment of inflammation of the auditory canal. Having cited an excerpt from Galen, he goes on to state:

And so, Galen wrote this, advising to us that we must use this [i.e. fomentation] for every painful inflammation, without making it [i.e. his advice] more specific (*mēden prosdiorisamenos*). As I (*egō*) have already told you, I prescribe this to young people with a hot *krasis*, where the inflammation is associated with high temperature and often even with fever, especially if it is in summertime and the patient falls ill in a warm place. But it is better, if you are obliged to use the fomentation due to the extreme severity of the pains, to administer the fomentation with a sponge that has been immersed in hot water.⁶⁴

Galen describes a detailed procedure using a special probe (*mēlōtis*) to infuse some drugs into the ear that also includes a fomentation stage. Once again, by using a first-person singular pronoun to emphasise the point, it would seem that Alexander feels the process of fomentation needs further clarification,

61 Alexander of Tralles, *On Fevers*, 1, ed. Puschmann (1878) 1.301.10–22.

62 Galen, *MM*, 8.5, ed. Kühn (1825) x.570.17–577.4.

63 See also Alexander of Tralles, *Therapeutics*, 5.4, ed. Puschmann (1879) 11.155.20–22; and Guardasole (2004b: 222–7).

64 Alexander of Tralles, *Therapeutics*, 3.2, ed. Puschmann (1879) 11.83.15–22.

which he eagerly provides based on experience he has gained after long-term contact with patients. In another, similar case, Alexander is keen to show that some antidotes, such as the Cyrenaic juice,⁶⁵ should not be used in every instance – having been incorrectly recommended by Galen – and cites some examples derived from his own experience:

And the most divine Galen set [this] out, but without providing any specifications (*prosdiorisamenos*); because of this many [physicians] have relied on these recommendations and given these [antidotes] indiscriminately, thus causing a very great damage and extreme danger [to the patients].⁶⁶

Here, unlike in the other cases, Alexander refers also to those who followed Galen's advice without revising it in line with their practical experience like he did. Judging by Alexander's account, it seems that Galen was perceived as an infallible authority by Alexander's contemporaries. Alexander, writing three centuries or so after Galen's death, is the first author who did not hesitate to expose Galen's weaknesses, even though they were few in number given the vast size of his corpus.

The last example I shall present will also give us the opportunity to better understand Archigenes' role in Alexander's work. Alexander discusses the diagnosis and therapy of a patient suffering from thick, gluey pulmonary humours. First, Alexander criticises Galen, once again hailed as 'most divine', for not being able to accurately describe a certain stone (*lithos*) that could be expectorated from a patient's mouth and that made a noise when it hit the ground, a simple reference to a hailstone (*chalazion*).⁶⁷ Afterwards, Alexander considers Galen's advice on the use of warming agents inappropriate and finally comes up with his own composite drug for the purpose. Addressing Galen, he states:

His [Galen's] statement about Archigenes is indeed true: 'it is hard for a man not to be mistaken about many things, about some of which he is completely ignorant, some because he judges them wrongly, and others because he had treated them carelessly'. I would not dare to say these [things] of such a wise man [i.e. Galen], if truth had not given me the

65 Galen, *MMG*, 1.12, ed. Kühn (1826) XI.40.

66 Alexander of Tralles, *On Fevers*, 7, ed. Puschmann (1878) 1.421.4–6.

67 Cf. Galen, *Loc. Aff.*, 4.11, ed. Kühn (1824) VIII.291ff.

courage, and in addition I would have considered [it] disrespectful to remain silent.⁶⁸

Alexander contrives a respectful way to mitigate his criticism of Galen by appropriating his master's own words.⁶⁹ It seems that this particular quotation from Galen's *On the Composition of Drugs According to Places* has not been used at random.⁷⁰ This could be seen as an attempt to temper Galen's often-critical attitude towards Archigenes, and thus serve as an emphatic pointer to Alexander's readers when consulting other parts of his treatise where he not only makes use of outlandish medical recommendations that can be classified as natural remedies (*physika*), but even calls Archigenes 'most divine'.

2 The Latin Medical Handbook

The late antique period also witnessed the production of medical handbooks in Latin to serve the western Mediterranean. Direct dissemination of the Galenic corpus in Latin is very limited in this early period, mainly restricted to a few translations of such works as *On Sects for Beginners* and *Therapeutics to Glaucon*,⁷¹ and its indirect transmission through translations into Latin of late antique Greek medical works, including those by Oribasios.⁷² The absence of Galen from the pharmacologically focused manuals *Medicina Plinii* (c. fourth century AD) and *On Drugs* by Marcellus of Bordeaux (fl. early fifth century AD) is not surprising, since in both cases there is a strong preference for Latin sources.⁷³ Galen is also not cited in the *Acute and Chronic Diseases* by Caelius Aurelianus (fifth century AD), the Methodist medical author and compiler of Soranus' Greek works into Latin, although Caelius often cites the recommendations of other Greek authors, such as Hippocrates, Diocles and Praxagoras (fourth/third century BC), despite disagreeing with them. Galen's absence from Caelius' works could perhaps be explained by the unavailability

68 Alexander of Tralles, *Therapeutics*, 5.4, ed. Puschmann (1879) II.155.13–18.

69 See Bouras-Vallianatos (2016: 385–6).

70 Galen, *Comp. Med. Loc.*, 2.1, ed. Kühn (1826) XII.535.4–6.

71 The *Art of Medicine* may also have been translated into Latin; see Fischer (2013: 694–5). On *Therapeutics to Glaucon*, see Fischer (2012).

72 Baader (1984). See also the recent study by Buzzi and Messina (2014) with references to previous bibliography, in particular, on Latin translations of Oribasios; cf. Fischer (2013: 688–9).

73 On these two works, see Doody (2009) and Stok (2008) respectively.

of Soranic disputations on the Pergamene physician.⁷⁴ There are only two authors who seem to have appropriated Galenic material at some length in their works: Theodore Priscianus and Cassius Felix.

Theodore Priscianus, most probably active in the late fourth/early fifth century AD, was a physician and student of the prominent North African politician and physician Vindicianus. The only works of his to survive are a collection of remedies, the so-called *Euporista*, along with the preface and two chapters from *Physica*, both works in Latin. *Euporista* belongs to the well-established tradition of the *euporista* or, in Latin, *parabilia*, referring to easily procurable remedies that could be used by travelling physicians or even non-specialists with an elementary knowledge of medicine. It is a practical work consisting of three books, each following an *a capite ad calcem* arrangement. The first, *Faenomenon*, and the second, *Logicus*, deal with affections of the inner and outer parts of the body respectively, while the third, *Gynaecia*, focuses on women's diseases. Theodore had written works in Greek, and although it has been claimed that *Euporista* is based on a translation of his own Greek original,⁷⁵ David Langslow has rightly noticed that this is not explicitly stated in Theodore's preface.⁷⁶ Greek was not so widely understood in the West by the fourth century, thus Theodore's project must be seen as an attempt to address a broad audience.⁷⁷

Galen is never mentioned by name in Theodore's work, unlike Hippocrates, who appears a couple of times, mostly alluding to a certain *Aphorism*.⁷⁸ I think Galen's absence could be explained in this case by Theodore's general tendency throughout his work not to name his sources. There are, however, parts that closely resemble passages from Galen's works. For example, in the *Faenomenon*, there are occasionally very close parallels with recipes from Galen's *On the Composition of Drugs According to Places*, *On the Composition of Drugs According to Kind*, and *On the Capacities of Simple Drugs*.⁷⁹ A thorough grounding in Galen, combined with Methodist sources, such as Soranus,⁸⁰ is regularly detectable in book 2, which shows familiarity with other Galenic

74 Urso (1997: 9); and Eijk (1999: 432).

75 Önnersfors (1993: 288); and Formisano (2004: 129).

76 See Langslow (2000: 55–6), who also thinks that Theodore's first language was Greek. Cf. Theodore Priscianus, *Faenomenon*, pr., ed. Rose (1894) 1.1–2.4.

77 On Theodore Priscianus, see Langslow (2000: 53–6); and Formisano (2001: 74–84).

78 E.g. Theodore Priscianus, *Faenomenon* and *Logicus*, 16 and 25, ed. Rose (1894) 51.1–5 and 121.14–17; [Hippocrates], *Aphorisms*, 5.18 and 2.42, ed. Littré (1844) 1v.482.7–8 and 538.3–4 = ed. Jones (1931) 162.1–3 and 118.11–12.

79 See Fraisse (2003: 185–6).

80 Migliorini (1991).

works, including the *Therapeutic Method* and *On Affected Parts* as well as the pseudo-Galenic *On Procurable Remedies*.⁸¹

A more obvious case of adopting Galenic material is that of Cassius Felix, a physician from North Africa, active in the first half of the fifth century AD. His *On Medicine* is a practical handbook consisting of eighty-two chapters providing information about the definitions, symptoms, causes, and treatment of various diseases arranged in an *a capite ad calcem* order.⁸² The work is dedicated to his son, presumably a physician, and unlike Theodore's *Euporista*, was clearly aimed at the specialist who also had some understanding of Greek.⁸³ Furthermore, unlike in Theodore, where surgery is limited to the use of phlebotomy, here one finds advice on invasive surgery, such as the removal of an abscess using a rounded cut (*strongylotomian*) or the use of a special instrument (the so-called *syringotomo*) for operating on fistulae,⁸⁴ although Cassius does not refer to complicated techniques such as trephination. The brief nature of Cassius' advice clearly suggests a background in the required surgical skills on the part of his reader. Intriguingly, there are some cases in which natural remedies, including the use of amulets, are recommended, but often as a last resort.⁸⁵ Cassius declares in his preface that his intention is to provide the medical knowledge of the Greek authors of the Dogmatic or "logical" school (*ex Graecis logicae sectae*) in brief (*in breuiloquio*) in Latin.⁸⁶ Of the sources named throughout his work, Hippocrates and Galen are by far the most often cited, followed by Philagrios and Vindicianus (fl. second half of the fourth century AD). Methodism also has a significant presence, although Cassius never refers to any author of this school by name.

The use of Hippocrates is limited to eleven brief references from *Aphorisms* and two from *Prognostic*. Of these, two are cited using Galen and another two seem to have been known through the corresponding Hippocratic commentary on the *Aphorisms* by the Alexandrian iatrosophist Magnos, who is explicitly mentioned.⁸⁷ Although Galen's name is only cited seventeen times, there is extensive use of Galenic material throughout the treatise, mainly focused on therapeutic recommendations from his three pharmacological works

81 Cf. the *apparatus criticus* in Rose's (1894) edition and the *apparatus fontium* in Meyer's (1909) German translation of Theodore's work *passim*.

82 On Cassius Felix and his work, see Fraisse (2002: vii–xxviii). See also Langslow (2000: 56–60).

83 On the abundant use of Greek terminology in Cassius' work, see Fraisse (2002: lvii–lxi).

84 Cassius Felix, *On Medicine*, 18.5 and 20.2, ed. Fraisse (2002) 34.3 and 37.5.

85 See, for example, Cassius Felix, *On Medicine*, 71.6, ed. Fraisse (2002) 192.13–17.

86 Cassius Felix, *On Medicine*, pr., ed. Fraisse (2002) 4.2–5.

87 Fraisse (2002: xxix–xxx); and Temkin (1977: 175).

(*On the Composition of Drugs According to Places*, *On the Composition of Drugs According to Kind*, and *On the Capacities of Simple Drugs*) and his *Therapeutics to Glaucon*, especially the sections on fevers. The vast majority of Galenic passages in Cassius' work are transmitted in translation without considerable variation.⁸⁸ Nevertheless, as Anne Fraisse has shown, there are times when one can spot Cassius' intentional interventions, such as when he supplements the Galenic therapeutic indications for a certain composite drug or reduces the number of ingredients in a composite drug to perhaps make it less expensive or more easily obtainable, and thus more accessible to his readers,⁸⁹ who are now able to access Galen *alla Latina*.

3 Conclusion

The authors of late antique medical handbooks made significant efforts to not only transmit but to select, abridge, and re-arrange Galen's works in a useful and practical manner. The process of adaptation was not a mechanical one and these authors were not simply 'refrigerators' of classical knowledge, as they were once described.⁹⁰ On the contrary, their compiling methods attest to an intellectual process that aimed to enhance consultation of an otherwise vast corpus, thus making Galen available to contemporary practitioners in an accessible format. Interestingly, among the most often cited Galenic works are the pharmacological texts,⁹¹ which were excluded from the more theoretically oriented Alexandrian curriculum. It has also been pointed out that late antique authors often mixed Galenic excerpts with texts from other ancient authors, revealing an often-remarkable pluralism. The persistence of Methodism, in particular in the West, shows that the spread of Galenism was not as instant and far-ranging as one might imagine. Furthermore, the works of the Hippocratic corpus, although often approached through Galen, were also consulted in their own right in a number of instances. The use of authors who had been strongly criticised by Galen (e.g. Athenaeus and Archigenes) shows a striking independence in the selection process. This independent attitude is even more evident in the works of Alexander of Tralles, whose enthusiasm was always supported by a wealth of personal observations derived from treating his own patients. Alexander attempted to promote himself as a most capable

88 See Fraisse (2002: xxx–xxx).
 89 Fraisse (2002: xv, xxxii–xxxv).
 90 Nutton (1984: 2).
 91 This has also been recently pointed out by van der Eijk et al. (2015: 215).

practising physician, and therefore someone with sufficient experience and knowledge to critique the incontestable Galen. His inquisitive spirit, however, never led him to make a systematic attempt at undermining Galen's authority, unlike, for example, the eleventh-century Byzantine author Symeon Seth, who wrote a short treatise specifically criticising him.⁹² Unlike Symeon, Alexander was a vigilant practising physician, who having benefited considerably from reading and using Galen's advice, nevertheless felt sufficiently confident in his own judgment to suggest revisions, thus improving its practical application.

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⁹² On this, see Bouras-Vallianatos (Chapter 4) in this volume.

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Galen's Legacy in Alexandrian Texts Written in Greek, Latin, and Arabic

Ivan Garofalo

From the end of the fifth and throughout the sixth century,¹ a medical school with a philosophical framework was active in the Egyptian city of Alexandria.² A selection was made from the available works of Galen to form a clearly defined curriculum for the students, divided into various courses.³ In the process of selection, Galenic works were commented on, summarised, and reduced to schemata and synopses. Subsequent decades saw a number of new studies and editions of texts connected to this tradition. This rich legacy shaped a substantial part of the transmission and reception of Galenic thought.

The Alexandrian canon of Galenic works consists of sixteen single works or groups of works. Many Alexandrian physicians had already written commentaries on these works from as early as the fifth century.⁴ The clearest

- 1 The floruit of Gesios, the earliest commentator, is from around the beginning of the sixth century. John of Alexandria and Stephen are probably a generation or two later than Gesios, whom they quote. All translations into English are my own unless otherwise stated.
- 2 A useful presentation of the topic of this chapter is in Palmieri (2002). For textual criticism concerning the Alexandrian production, see Garofalo (2003a). For a general survey, see Duffy (1984). On late antique Alexandria, see Harris and Ruffini (2004); Pormann (2010: 419–21); Roueché (1991). For archaeological evidence, see Majcherek (2008). The professors of medicine who taught in Alexandria were called *iatrosophistae*; see Baldwin (1984). They were also practising physicians. This is attested for Gesios; see Overwien (2018).
- 3 The Alexandrians probably knew all the works of Galen that survived the transmission from papyrus roll to parchment codex. The commentators quote a number of works not included in the canon: Stephen does not quote additional canon works in his *Commentary on Galen's 'Therapeutics to Glaucon'*, but in the *Commentary on Hippocrates' 'Aphorisms'*, he quotes Galen's *On the Function of the Parts of the Body* (Stephen, *Commentary on Hippocrates' 'Aphorisms'*, 4.26, ed. Westerink, (1992) 278.4–5, and Galen's pharmacological treatise *On the Capacities of Simple Drugs*, 5.23, ed. Westerink (1995) 78.15). John of Alexandria, in his *Commentary on Hippocrates' 'Epidemics VI'*, refers to many Galenic non-canonical works: see ed. Pritchett (1975) 456, index. In Palladios' *Commentary on Hippocrates' 'Epidemics VI'*, only Galen's *On Affected Parts (Diagnostikē)* is mentioned (ed. Dietz (1834) 11.14.30).
- 4 Ihm (2002). Gesios commented on all or at least some of the works of the canon, according to the Arab bibliographer Ibn Abī Uṣaybi'ah, *Sources of Information on the Classes of Physicians ('Uyūn al-anbā' fī ṭabaqāt al-aṭibbā')*, ed. Müller (1884) 11.104.1ff. For the commentaries on Galen's *On Sects for Beginners* and *On Mixtures*, see the Appendix.

description of the canon is found in the Arabic translation of the preface of the *Synopsis of the Sixteen Works of Galen* by John the Grammarian, or Yaḥyā al-Naḥwī as he is known in Arabic:⁵

Chapter on the ordering of the sixteen [books] and their distinction and their limitation to this number.⁶

You must know that the sixteen books divide into two groups, one with the role of introduction to the theory and the practice of the medical art, and [these] are the first four [books], namely [1] the book *On the Sects*, [2] the book *On the Small Art*,⁷ and [3] the book *On the Pulse* and [4] the book *To Glaucōn*; the observation and the practice of medicine are [formed by] 12 books, thereof four belong to the natural things and are [5] the book of the *Elements* and [6] [the book] of the *Temperaments*⁸ and [7] [the book] of the *Natural Capacities*, and [8] [the book] of the *Dissection*; and six belong to the things outside nature and are [9] the book *On Affections/Causes*⁹ and *Symptoms*, and [10] the *Affected Parts*, and [11] the *Great Pulse*, and [12] the *Crises*, and [13] the *Critical Days* and [14] the *Fevers*; and one of them concerns what preserves the natural things and is [15] the book of the *Diet of Healthy People*, and another concerns the restoration of the things that are outside nature and is [16] the book of the *Method of Healing*.

This is the division of the books and their ordering; the reason of their being limited to this number is that it suffices to the art thus established on it; for, since the aim of the medical art is the preservation of what is natural and the restoration of what is against nature into the natural state, it follows from this that the pupil should consider what is natural

5 Other accounts are provided by Ḥunayn ibn Ishāq and Ibn Riḍwān; see Iskandar (1976). The Arabic sources often confound John the Grammarian with John Philoponos; see Garofalo (2000b).

6 The numbering (in brackets) of the relevant texts is mine.

7 This is the title for Galen's *Art of Medicine* (the same in also in summary of the same work). In Agnellus (see the Appendix), the title is *Ars*, and in the Greek commentaries of the Alexandrian scholars it is *Technē*; see Boudon (2000: 149ff).

8 In Arabic *mizāj* may also designate a plurality.

9 *Book of the Affections and the Symptoms*. Iskandar (1976: 246) translates it as 'ilal (*On Diseases*). Ḥunayn, in his *Risālah*, ed. Bergsträsser (1925) 11 = 16, ed. Lamoreaux (2016) 25, attributes the title *On the Causes* to the scholars in Alexandria. In fact, the Greek title is in the singular, *Peri Aitias*, as it is preserved, for example, in the relevant *tabula* in Vindobonensis med. gr. 16, fol. 340v; see Gundert (1998). Ḥunayn attributes the title *On Affections and Symptoms* to the Syriac tradition, which he uses in the *Risālah* and in the translation of the summary. It is now known that it is also found in John the Grammarian's synopsis and summary.

and what preserves it, and what is against nature and what restores it; what is natural and the physician must observe are the elements and their temperament and the capacities that are generated by their temperament, and he should observe in the book of the [5] *Elements* the capacities of the elements that are found in the composite bodies, and in the book of the [6] *Temperaments* he should observe the temperaments, and in his book of [7] *On the Natural Capacities* he should observe the capacities that arise from them, and in his book [8] *On Dissection* he should observe the parts that originate from them.

The things outside nature are the diseases, the causes and the symptoms, and these are dealt with in his book [9] *On Affections/Causes and Symptoms*. And since some of the diseases are visible and some hidden, the visible ones have a visible sign, the hidden ones a hidden sign, and he teaches us how to diagnose them in his book [10] *Affected Parts*; and since one of the signs from which you diagnose is the pulse and the discourse on it is very various, he taught us it in his book [11] *On the Great Pulse*; and since the crises are connected to the diseases and the crises depend on the days, he taught the number of the crises in his book [12] *On Crises* and the number of the days of the crisis in his book *On Critical Days*; and since one of the kinds of diseases is the fevers and the discourse on them is very various, he dedicated to that one book, and this is his book [14] *On Fevers*,¹⁰ and he spoke of what preserves what is natural [15] in the *Diet of Healthy People*, and he spoke of what restores what is extra-nature to the natural state [16] in the *Method of Healing*.¹¹ His intention in the composition of the sixteen [books] has been explained, and it is clear what the students get from reading them.¹²

The arrangement in the physiological books of the canon follows a logical order from the most simple to the most complex. It is different from the order proposed by Galen in *On the Order of [Reading] my Own Books*. In Alexandria, the first four books were for beginners, the following twelve for advanced

10 This simplified title of *Peri Pyretōn Diaphoras* is also found in the synopsis of *On the Different Kinds of Fevers*, Princeton Garret 1075, fol. 100r6.

11 This is the order in the *Risālah*, ed. Bergsträsser (1925) 16 = 22, ed. Lamoreaux (2016) 35. Ḥunayn moves *Hygieina* to no. 84 of his list. Ibn Abi Uṣaybi'ah (*Risālah* ib.) inverts the order of *Hygieina* and the *Therapeutic Method*, as does Riḍwān (Iskandar 1976). In the manuscripts of the summary, both orders are found. See Ullmann (1970) and Lieber (1981).

12 John the Grammarian, *Synopsis of the Sixteen Works of Galen*, British Library Arundel Or. 17, fols 2v–3r.

students.¹³ The task of selecting these texts and compiling them into a syllabus was massive. There is no conclusive evidence about the minds behind this selection. Ishāq ibn Ḥunayn (who follows John the Grammarian)¹⁴ mentions four names: Stephen, Gesios, Anqilaws, and Marinos. Of these, the most important was Anqilaws/Anghilaws,¹⁵ who may be identified with the Greek scholar Angeleuas, mentioned by Stephen in his commentary to *Therapeutics to Glaucon*,¹⁶ as well as Angeleo, mentioned by Agnellus in his commentary on the *Art*.¹⁷ He cannot be identified with Asklepios, one of the sources of Stephen's commentary on the *Aphorisms*.¹⁸ Far more information is available as far as Gesios and Stephen are concerned. Much is known of Gesios, because many Christian writers showed an interest in his work, and Stephen's treatises offer many a hint about his personality, as described by Wanda Wolska-Conus.¹⁹

Once the relevant Galenic texts were selected, they were shortened and systematised by the Alexandrian scholars. This led to the production of commentaries, summaries, and schematic diagrams, or *tabulae*. The most labour-intensive task was the production of the commentaries.²⁰ Some of these works are preserved in Greek and four in Latin (see the Appendix). Some follow the pattern that had been established for teaching purposes in the school of Ammonios and Olympiodoros in Alexandria between the end of the fifth and the first half of the sixth century. The students attended philosophy lectures and took notes, and their notes were then revised by the teacher. This meant that content was divided into lessons (*praxeis*), which in turn were subdivided into *theoria* (introduction to the lesson) and *lexis* (commentary on single lemmata). In other cases, the Alexandrian commentaries do not follow this structure, and instead present a continuous lemmatised commentary. The Arabic

13 The former were called *eisagomenoi* in Greek and *ysagomeni* in Latin, as in Agnellus of Ravenna, *Commentary on Galen's 'On the Pulse for Beginners'*, ed. Palmieri (2005) 3.

14 See Ullmann (1970: 228ff).

15 See Ihm (2002: 73–4) for a suggested identification.

16 Stephen, *Commentary on Galen's 'Therapeutics to Glaucon'*, ed. Dickson (1998) 76.3. The spelling Anghilaws is found in the commentary of al-Ṭayyib, *On Mixtures* in Leiden Or. 278/1.

17 Palmieri (1993) interprets 'Angeleo' as 'Ageleo', from the Greek *gelaio*s (said of rustic physicians).

18 See Garofalo and Palmieri (2005).

19 Wolska-Conus (1992).

20 On the structures of late antique commentaries (philosophical, medical, grammatical) in the form of *praxeis* (lessons) divided into *theoria* and *lexeis* (general presentation and commentary of the single lemmata), see Garofalo (2000a). On Palladios, see the edition by Irmer (1977).

commentaries by Abu al-Faraj ibn al-Tayyib (d. 1043) are an intermediate case, as they are divided into lessons but are not further subdivided.

This first group of texts, the commentaries,²¹ always have an introduction containing basic information on the text. In the case of Agnellus' *On Sects*, for instance, it covered the following topics: (1) intention of the work, (2) the usefulness of the book, (3) authenticity, (4) reason for the title, (5) the order in which the book must be read, (6) character of the work (theoretical, practical, mixed), (7) division into parts, and (8) didactic method (analytic, synthetic, definitional).

A peculiarity of these commentaries, and the philosophical ones, is the discussion of the so-called *aporiai*, or questions. The commentator proposes various questions (*aporiai*, *quaestiones*), typically attributed to anonymous authorities (with a few exceptions), and proposes various solutions (*lyseis*, *solutiones*).²² In doing so, particular attention is paid to the order in which Galen or Hippocrates present their doctrines.²³ This feature has its origin in Galen and is here developed further in that it is more schematised.

The second group of material are the summaries, or *summaria*.²⁴ Some of them are actually compendia, but sometimes – as in the case of the summary of *Therapeutics to Glaucon* and the summary of the *Therapeutic Method* – the original matter is rearranged and supplemented. The Greek originals are lost,²⁵ but their Arabic translation (by Hunayn?) is preserved in various manuscripts.²⁶ Sezgin published a xerographic reproduction of the manuscripts Suleymaniye 3538 and 3509 and Princeton Garrett 1075, 2, omitting, however, the summary of the *Therapeutic Method* and that of the *On Critical Days* and *On the Preservation of Health*, which is preserved solely in the Princeton Garrett 1075 manuscript.²⁷

The third, and rather unusual, feature is the so-called *tabulae*.²⁸ These are preserved in Vindobonensis med. gr. 16 and also partially in the Neapolitanus

21 For textual contributions to the summaries, see Garofalo (2001).

22 For example, Stephen, *Commentary on Hippocrates' 'Aphorisms'*, 1.27, ed. Westerink (1985) 112.

23 For example, Stephen, *Commentary on Hippocrates' 'Aphorisms'*, pr., ed. Westerink (1985) 30.19.

24 On the summaries, see Garofalo (2003b).

25 The Greek origin is confirmed by the literal parallels with the *tabulae* Vindobonenses.

26 On the question of the authorship of the translations, see Garofalo (2007: 206).

27 Sezgin (2001: I.xiv) maintains that these scripts were three volumes of the same collection, but I think the Garrett manuscript is not a part of the collection. In fact, the summaries of *On the Natural Capacities* and of *Minor Anatomy* are both present in the Istanbul manuscripts Fatih 3538 and 2539 and in the Princeton Garrett 1075.

28 Some *tabulae* appear in manuscripts of *On the Anomalous Dyskrasia*; see García Novo (1997).

Orat. CF 2, 1–1.²⁹ The title in Vindobonensis promises the *diareseis* (*tabulae*) of all the books of Galen, from *On Sects for Beginners* to the *Therapeutic Method*, however, only the first six items are present.³⁰ The *tabulae* offer a stemmatic distribution of the Galenic doctrine. The content of the tables is mostly the same as in the summaries, but is arranged in the form of a tree diagram (see Figure 3.1).³¹ Some examples of comparison are given in Table 3.1.

Yet, Alexandrian Galenism is not confined to commentaries, synopses, and summaries of Galen's works. The Hippocratic commentaries were written in the same spirit. In fact, most of it is contained in the rich commentary on *Aphorisms* by Stephen and the commentaries by Palladios on *Epidemics VI* and John of Alexandria on the same text. The following briefly exposes some major issues of Alexandrian Galenism,³² amongst others in doxography, anthropology, medical ethics, anatomy, physiology, semeiotics, pathology, pharmacology, and surgery.

First, one of the features Alexandrian Galenism inherited from Galen is the interest in doxography in a schematic and dogmatic form, a 'history' of medicine where there is a correct doctrine (Hippocrates' and Galen's) and other doctrines that are variously erroneous. One also finds this history in the commentaries, summaries, and synopses, and in the *tabulae* in Vindobonensis med. gr. 16 of *On Sects for Beginners*. This material has been identified by Temkin.³³ See, for instance, the samples reproduced below, in Table 3.1, which contains lists of influential physicians as they appear in various sources. Whereas it is easy to understand why some names are included in these lists, one wonders why Herophilus is omitted but the lesser-known Phylotimus is included.

The second point to be discussed is religion.³⁴ Although Galen was a heathen, something of a polytheist,³⁵ his Platonism made him acceptable to the Christians (as well as to the Muslims),³⁶ and his rationalistic form of faith was also practised by later Galenists. We are also aware of Prokopios' letter revealing that pagan and Christian intellectuals were on good terms in Alexandria.³⁷

29 See Ieraci Bio (2007).

30 Vindobonensis med. gr. 16, fol. 329r: 'ἀρχόμενος ἀπὸ τοῦ περὶ αἰρέσεων τελευταίων δὲ εἰς τὴν θεραπευτικὴν'. On this manuscript, see also Degni (Chapter 6) in this volume.

31 The *tabulae* were probably known in Arabic translation to al-Rāzī, who quotes 'summaries in form of distinction'; see Garofalo (2003b).

32 For a general view of medicine in Alexandria in the second to seventh centuries, see Overwien (2018).

33 Temkin (1935).

34 On religion and medicine in Late Antiquity, see Temkin (1991) and Petit (2015).

35 On Galen's approach to religion, see Kudlien (1981) and M. L. Garofalo (2014).

36 Temkin (1973).

37 See Petit (2015).

TABLE 3.1 Alexandrian texts *On Sects for Beginners*

Synopsis, <i>On Sects for Beginners</i> , British Library Arundel Or. 17, fol. 3r	Summary, <i>On Sects for Beginners</i> , ed. Sezgin (2001) 1.3	<i>Tabula 1</i> , Vindobonensis med. gr. 16, fol. 329r	Agnellus of Ravenna, <i>Commentary on Galen's 'On Sects for Beginners'</i> , ed. Westerink et al. (1981) 22.31–24.3	Ps.-John of Alexandria, <i>Commentary on Galen's 'On Sects for Beginners'</i> , 2ra, ed. Pritchett (1982) 15.31–16.37
Those who accept experience and were more famous for it are a few; among them Akron of Akragas and Philinos of Kos and Serapion of Alexandria and Sextos and Apollonios, are a few; among them Hippocrates, Diocles and Praxagoras and Phylotimus and Erasistratus and Asclepiades. Those who were famous for the method are: Themison of Laodikeia and Thessalus and Menemachus and Mnaseas and Soranus.	Those who started the foundation of the sect of the Empiricists; Akron Akragantinos, Philinos al-qawami [of Kos], Serapion (<i>Sarafywn</i>) of Alexandria and Sextos (<i>skhsts</i>) and Apollonios (<i>Abulufius</i>). Those who started the foundation of the sect of the rationals: Hippocrates, Diocles, Praxagoras, Phylotimus, Erasistratus, Asclepiades. Those who started the foundation of the sect of the Methodists: Themison of Laodicea and Thessalus and Miamafas (?) and Mnaseas and Soranus.	συνεστήσαντο τὴν ἐμπειρικὴν οἶδε. Ἀκρων, Ἀκραγαντίνος, Φυλίνος Κῶος, Σεραπίων Ἀλεξανδρεὺς, Σέξτος, Ἀπολλώνιος τὴν δὲ λογικὴν οἶδε. Ἱπποκράτης, Διοκλῆς Πραξαγόρας, Φιλότιμος, Ἐρασίστρατος, Ἀσκληπιάδης. τὴν δὲ μεθοδικὴν οἶδε. Θεμισίων Λαοδικεὺς, Θεσσαλός, Μενέμαχος, Σωρανός.	Qui constituerunt inpiricam sectam? Acron Cacrantinus, Philon de Cho, Seraphion de Alexandria, Sextus, Apollonius. Qui sunt qui constituerunt dogmaticam sectam? Ypocrates de Cho, Diocles, Praxagoras, Philotemus, Erasistratus, Asclepiades, <i>Gallienus</i> . Qui sunt qui constituerunt methodicam sectam? Fimison de Laodicia, Tessalus de Roma, Mimomachus, Soranus.	empiricam sectam Serapion et Apollonius senior et Apolonius iunior et Eraclitus Nicomacus Glaucias Menodotus Sextus Afer, logicam sectam Ypcras Praxagoras Diocles Erasistratus Crisippus Erofilus Leufastus Asclipiades <i>Galienus</i> ... methodicam sectam Themison Thesalus Dionysius Mnaseus Philon Olimpicus Soranus Menemacrus Avidianus invenerunt.

After Gesios lost his fight against the church,³⁸ as narrated by Damaskios, it is safe to assume that the Alexandrian Galenists were Christians.³⁹ Religion, however, is not distinctly present in the texts examined here, even though it would have posed a number of intriguing opportunities for discussion, such as for instance in regard to the argument on the divine origins of diseases in Stephen's *Commentary on Hippocrates' 'Prognostic'*.⁴⁰

Similarly, the commentary of John of Alexandria on the famous episode of the dancing girl in *On the Nature of the Child* with reference to abortion is not particularly Christian.⁴¹ There is, however, an exception. A pronounced and naive characterisation of a Christian is to be found in Agnellus, from the marginal Ravenna,⁴² who writes in his commentary on Galen's *On Sects for Beginners*:

Priests act in similar fashion when they wish to baptise: first they resort to exorcisms and then they baptise.⁴³

[The heathens] used to go to holy places, that is to temples or cross-roads ... since they too had holy places just as we [speaking with respect] have our churches.⁴⁴

Similarly, he addresses God in his preface ('with the help of God we are aptly called physicians')⁴⁵ and the will of God is also mentioned at the start of his

38 Watts (2009: 119ff.). Watts maintains that the account of the conversion of Gesios to Christianity has no solid basis. It cannot be trusted, because the story was narrated by Sophronios, a century after Gesios.

39 God appears in the explicit stereotype *syn theō* in Stephen, *Commentary on Hippocrates' 'On Aphorisms'*, ed. Duffy (1985) 136.29. The ending 'with the help of God' has also been transmitted under the name of Simplicios in Agnellus of Ravenna, *Commentary on Galen's 'On Sects for Beginners'*, ed. Westerink et al. (1981) 154.13–14. In John of Alexandria, *Commentary on Hippocrates' 'Epidemics VI'*, fr. 40, ed. Duffy (1997) 96.7 = 147d, ed. Pritchett (1975) 393.64, there is also a mention to *theos* but it is not clear whether it refers to the Christian God.

40 Stephen, *Commentary on Hippocrates' 'Prognostic'*, ed. Duffy (1983) 54.

41 John of Alexandria, *Commentary on Hippocrates' 'On the Nature of the Child'*, ed. Westerink et al. (1997) 146.16–17.

42 Agnellus mirrors a rather popular milieu as betrayed by his images and examples, see Garofalo (2000a).

43 Agnellus of Ravenna, *Commentary on Galen's 'On Sects for Beginners'*, ed. and tr. Westerink et al. (1981) 110.8–9.

44 Agnellus of Ravenna, *Commentary on Galen's 'On Sects for Beginners'*, ed. and tr. Westerink et al. (1981) 52.24–7.

45 Agnellus of Ravenna, *Commentary on Galen's 'On Sects for Beginners'*, ed. Westerink et al. (1981) 2.13–15.

commentary ('Let us start [our book] with the help of God'),⁴⁶ and when he goes on to another topic stating, 'with the approval of God'.⁴⁷

Authenticity is a topic important to the Alexandrians, in particular the problem of recognising forgeries. Agnellus gives, for example, three reasons why someone would falsely attribute a work to Galen:⁴⁸ financial gain, fame (which is not difficult to understand), and respect for the master. Overall, Alexandrian medicine does not contain irrational elements, such as magic.⁴⁹ For instance in *Commentary on 'Therapeutics to Glaucon'*, Stephen condemns those who interpreted a passage to state that Galen himself believed the womb to be an animal (*zōon*) in *Therapeutics to Glaucon*, where Galen advises applying pleasant scents to the womb and foul scents to the nostrils to calm hysterics.⁵⁰ Stephen explains that the brain, irritated by the foul scents, contracts and causes the parts (of the body) to contract so the womb is pushed downwards. The limbs should enjoy good scents because these scents are warm and promote concoctions. Lastly, some change in professional ethics and etiquette in the late Alexandrian period is attested sparingly in the commentaries and summaries.⁵¹

46 Agnellus of Ravenna, *Commentary on Galen's 'On Sects for Beginners'*, ed. Westerink et al. (1981) 4.16.

47 Agnellus of Ravenna, *Commentary on Galen's 'On Sects for Beginners'*, ed. Westerink et al. (1981) 148.13–14.

48 Agnellus of Ravenna, *Commentary on Galen's 'On Sects for Beginners'*, ed. Westerink et al. (1981) 32. These points were common among the commentators of the Aristotelian *Categories*. See, for example, Olympiodoros, *Commentary on Aristotle's 'Categories'*, ed. Busse (1902) 13.4–14.4.

49 Contrast Alexander of Tralles' bias towards such remedies; see Bouras-Vallianatos (2014). On the other hand, John of Alexandria has some sympathy for Hermeticism; see Petit (2015). I believe that the Stephen who wrote the astrological and alchemical works is not the same person who commented on Hippocrates, Aristotle, and Galen (as Wolska-Conus, 1992, aimed to prove); for a recent summary of the *status quaestionis*, see Boudon-Millot (2016).

50 Stephen, *Commentary on Galen's 'Therapeutic to Glaucon'*, ed. Dickson (1998) 234.9ff. Dickson's translation as 'autonomous creature' is misleading.

51 Stephen, *Commentary on Hippocrates' 'Prognostic'*, ed. and tr. Duffy (1983) 68.24–6 and 69: 'and this type of symptom interpretation is particularly becoming when dealing with nuns or women who lead any kind of disciplined and chaste lives'. Nothing of the sort is said in Galen's *Commentary on Hippocrates' 'Prognostic'*. The same is said by John the Grammarian in his *Commentary on Galen's 'On the Pulse for Beginners'*, Berlin 6230 [ex We 1184], fol. 10v: '(touching the pulse on the wrist is more becoming) for if we want to feel a virgin girl and a free girl we hesitate to uncover her head, although she shows us her face'. The same prudish attitude in Agnellus of Ravenna's *Commentary on Galen's 'On the Pulse for Beginners'*, ed. Palmieri (2005) 9: 'If you say (sc. you can put your hand) on the temples, this is not good, because many women and virgins of noble origin do not allow her temples to be uncovered or felt'.

The Alexandrians contributed little to medical research, but it is beyond doubt that Alexandria's main contribution to medical history was the preservation of medical works up to the age of the translations into Syriac and Arabic. One should not, however, underestimate the Alexandrians' small but important additions. One topic of particular concern to Galen was anatomy, because he was afraid that nobody would deal with anatomy after his death. In fact, Oribasios only presents anatomical knowledge as found in Galenic works, but does not appear to have any practical experience with it. The Alexandrians pay great respect to anatomy, reiterating Galen's criticism of those who did not consider it essential.⁵²

As far as content is concerned, however, the situation is the same as with Oribasios: Alexandrian anatomy is a simplified, text-based form of Galenic anatomy. Beside the commentaries on the major Galenic works on anatomy, some snippets are also preserved in Galen's commentaries on Hippocratic works – *On Hippocrates' Prognostic*, *On Hippocrates' Fractures*, *On Hippocrates' Epidemics VI*, *On Hippocrates' Aphorisms* – and other Galenic works.⁵³ There are, however, some exceptions.

John of Alexandria, for instance, comments on the vessels of the placenta and the uterus.⁵⁴ The Alexandrians also coined new terminology for bones, and one finds diagrams of bones and sutures in the summaries and in John's synopsis.⁵⁵ Here, the sagittal suture is called *oboliaia* in *Introduction, or the Physician*, a pseudo-Galenic work that early on entered into the Galenic corpus.⁵⁶ Also, in the commentary by Palladios/Stephen on Hippocrates' *Fractures*, there is a short anatomy of the foot bones, where a bone is added to the tarsus beside the three cuneiforms:

The *pedion* has five little bones, the tarsus has four and the fingers fourteen, because the big finger has only two phalanxes. Beside these there are four big bones, the so-called scaphoides, the astragalus, the cuboid and the heel.⁵⁷

52 On the definition of anatomy, see Agnellus of Ravenna, *Commentary on Galen's 'On Sects for Beginners'*, ed. Westerink et al. (1981) 86. Agnellus is aware of Galen's, *AA*, 6.5, ed. Kühn (1821) II.556.

53 See Dubayan (2000).

54 See Garofalo (forthcoming).

55 The sources here are the summary and the synopsis of Galen's *On Bones for Beginners* as well as Palladios/Stephen, *Commentary On Hippocrates' 'On Fractures'*, edited by Irmner (1977).

56 Ps.-Galen, *Int.*, 12, ed. Kühn (1827) XIV.720.10 = 11, ed. Petit (2009) 40.22.

57 Palladios/Stephen, *Commentary On Hippocrates' 'On Fractures'*, ed. Irmner (1977) 52.11–16.

The Alexandrians also, however, introduced mistakes. In the commentary on *Epidemics VI*, John of Alexandria enumerates the organs of the voice: 'the organs of the voice ... larynx and the epiglottis'.⁵⁸ The epiglottis is not an organ of the voice for Galen, but the glottis is.⁵⁹ The same applies to the commentary of Palladios on Hippocrates' *Epidemics VI*, where three voice organs are mentioned: the larynx, epiglottis, and pharynx.⁶⁰ This confusion is also reflected in the Greek and Arabic tradition of Galen's *On Affected Parts*,⁶¹ as well as in the synopsis of a lost work on the voice, translated into Arabic and hence into Latin *On the Voice and Respiration*,⁶² and (partially) in the tradition of the *On the Function of the Parts of the Body*.⁶³ It is certainly of Alexandrian origin.

Some new additions to Galenic theory can also be found in the theory of muscles. In Palladios' *Synopsis on Fevers*, one finds an explanation for yawning: 'the patients yawn before fevers because the vapours, or winds, move from the interior all at once and ascend to the maxillar muscles and extend them by force'.⁶⁴ Here, the Alexandrians use terms not employed by Galen (or at least in extant Galenic works). The muscles shutting the mouth, the digastrics, are called *siagonitai myes*, a term used by the Anonymus Parisinus for the muscles causing the cynic spasm.⁶⁵ In John of Alexandria,⁶⁶ the cause of yawning is attributed to the *pneuma* in the jaw muscles coming from the styloid processes and the pharynx, so the expression probably points to the digastric muscles. Galen describes these muscles without giving them a name in *On Anatomical Procedures*.⁶⁷

58 John of Alexandria, *Commentary on Hippocrates' 'Epidemics VI'*, fr. 26, ed. Duffy (1997) 80.16–17 = 135c, ed. Pritchett (1982) 222.26–7.

59 Galen, *UP*, 7.13, ed. Kühn (1822), 111.562–3 = ed. Helmreich (1907) 1.409.

60 Palladios, *Commentary on Hippocrates' 'Epidemics VI'*, ed. Dietz (1834), 11.123.8–9.

61 See Garofalo (1995: 29). The summary of Galen's *On Affected Parts*, Princeton Garrett 1075, fol. 126v, ll. 20–1, has a description of the body similar to the tongue of the flute. Gärtner (2015), however, keeps the reading epiglottis.

62 Baumgarten (1962: 159).

63 Galen, *UP*, 16.4, ed. Kühn (1822) 4.278 = ed. Helmreich (1909), 11.386.28, see apparatus. The confusion continued up to Andreas Vesalius; see May (1968: 688, n.16).

64 Palladios, *Synopsis on Fevers*, 12, ed. Ideler (1841), 1.112.14–17.

65 Anonymus Parisinus, *On Acute and Chronic Diseases*, 23, ed. Garofalo (1997) 132.20–136.1.

66 John of Alexandria, *Commentary on Hippocrates' 'Epidemics VI'*, fr. 10, ed. Duffy (1997) 48.33 = 125a, ed. Pritchett (1985) 72.7–10. The corresponding passage in Palladios, the second part of the commentary, is lost.

67 Galen, *AA*, 4.11, ed. Kühn (1821) 11.472. In *On the Dissection of Muscles*, ed. Kühn (1830) xviiiB.934iff, the origin of the muscles is not indicated. The source must be *Anatomical Procedures*. John repeats the same doctrine in his *Commentary on Hippocrates' 'Epidemics VI'*, 136c, ed. Pritchett (1975) 223.54. Palladios, moreover, in his *Commentary on Hippocrates'*

The Alexandrians' most remarkable contribution to Galen's anatomy is perhaps the description of eyelid muscles, which is not detailed by Galen in *On the Dissection of Muscles*, a text in the Alexandrian canon. Stephen, who makes use of *On Anatomical Procedures*, the main anatomical work of Galen and *On the Function of the Parts of the Body*,⁶⁸ mentions the levator palpebrae, and this is reflected in the Alexandrian summary of Galen's work on the anatomy of the muscles. One erroneous new theory concerns the eye tunics. John the Grammarian states in his synopsis and the summary that all eye tunics arise from the two meninges of the brain. Galen, however, has the cornea arise from the dura mater in *On the Function of the Parts of the Body*,⁶⁹ and the choroid from the pia mater in *On the Function of the Parts of the Body*,⁷⁰ and the uvea from the same pia mater in *On Anatomical Procedures*.⁷¹ For Galen, however, the retina is an extension of the optic nerve and does not arise from the dura mater.⁷² The Alexandrians also contributed a wealth of other innovations to Galenic anatomy. For instance, Agnellus contains a compendium of the anatomy of the digestive tract.⁷³

Perhaps, the most important addition of the Galenism was the introduction of a third type of *pneuma*, the natural *pneuma*, which before then was only a hypothesis in Galen.⁷⁴ Here and there, one identifies content that may have come from an unknown source or Alexandrian research as such. The witnesses of Alexandrian bone surgery are the fragmentary *Commentary on Hippocrates' 'Fractures'* by Palladios (there is a parallel version attributed to Stephen) and the fragments of a commentary by Simplicios preserved in Rāzī's *Comprehensive Book on Medicine (Kitāb al-Hāwī)*.⁷⁵ The model is of course Galen's *Commentary on Hippocrates' 'Fractures'*, but something new or not otherwise attested pops up in these works.

'Epidemics VI', ed. Dietz (1834) II.131.8, states, 'But Nature did not neglect the middle parts, but evacuates the *pneuma* by yawning in the *siagonitai* muscles'.

68 Galen, *AA*, 10.4, ed. Simon (1906) I.60 = ed. Garofalo (1991) 88off. Galen, *UP*, 10.9, ed. Kühn (1822) III.804–5 = ed. Helmreich (1909) II.87.

69 Galen, *UP*, 10.3, ed. Kühn (1822) III.771–2 = ed. Helmreich (1909) II.63.

70 Galen, *UP*, 10.2, ed. Kühn (1822) III.767–8 = ed. Helmreich (1909) II.57. Cf. Leo the Physician, *Epitome on the Nature of Man*, ed. Renehan (1969) 35. This work by Leo is an important witness of the Alexandrian doctrine; see Ieraci Bio (2005).

71 Galen, *AA*, 10.2, ed. Simon (1906) I.46 = ed. Garofalo (1991) 869–70.

72 E.g. *AA*, 10.3 ed. Simon (1906) I.47 = ed. Garofalo (1991) 870.

73 Agnellus of Ravenna, *Commentary on Galen's 'On Sects for Beginners'*, ed. Westerink et al. (1981) 132–6.

74 See Temkin (1951) and Rocca (2012).

75 More in Garofalo (forthcoming).

As far as pharmacology is concerned, later Galenism mirrors a changed and somewhat poorer world. Some expensive ingredients are replaced by cheaper ones. For instance, in the summary of *Therapeutics to Glaucon*, panther lard is replaced with donkey lard.⁷⁶ Last but not least, one must mention an often-neglected genre that is essentially a product of Alexandrian Galenism: the production of pseudo-Galenic works. Many of them survive in Arabic and Latin translations from the Arabic. Hunayn has much to say about these forgeries.⁷⁷

Appendix

List of Relevant Works

[1] *On Sects for Beginners*

This was considered a general introduction to Galenic medicine.⁷⁸ In fact, each of the four opuscles of the first group was called *eisagogai* in Stephen and *isagoge* in John of Alexandria.⁷⁹ *On Sects for Beginners*, however, was the *eisagogē* par excellence. The introduction of the commentary on *On Sects for Beginners* is a general introduction to the work of Galen.⁸⁰ Agnellus provides a complete commentary in Latin,⁸¹ the introduction to it by a certain John, probably of Alexandria,⁸² fragments of Archelaos,⁸³ and one of an anonymous author, perhaps Angeleuas. Stephen alludes to his own commentary on it. There are the *tabulae*, Vindobonensis med. gr. 16, fols 329r–332r, and the Arabic summary.⁸⁴ John the Grammarian⁸⁵ wrote a commentary that was

76 *Summary on Galen's Therapeutics to Glaucon*, British Library Add. 23407, fol. 121v. See Galen, *MMG*, 2.6, ed. Kühn (1826) XI.105.7. Cf. Galen, *MMG*, 2.5, ed. Kühn (1826), XI.102.

77 Meyerhof (1928). See also those works dated to the later centuries, especially from the seventh and eight centuries onwards, in the index of the authors in the second volume by Anastassiou and Irmer (2001).

78 See edition by Palmieri (1989).

79 Stephen, *Commentary on Hippocrates' Aphorisms*, ed. Westerink (1995) 279, index. s.v. Γαληνός. John of Alexandria, *Commentary on Hippocrates' Epidemics VI*, 135b, ed. Pritchett (1975) 219.38.

80 Temkin (1932) was the first who cast light on this matter.

81 Edition by Westerink et al. (1981), with the contribution for the text by Palmieri (1989).

82 He is considered the author of the commentaries on Hippocrates' *On the Nature of the Child* and *Epidemics VI*. Palatinus lat. 1090 attributes the commentary on Galen's *On Sects for Beginners* to Gesios; see Palmieri (2005: xvii).

83 See Baffioni (1954) and (1958).

84 See Pormann (2004) and Overwien (2013: 91ff.).

85 See Manetti (1995).

translated into Arabic.⁸⁶ Abū al-Faraj ibn al-Ṭayyib also wrote a commentary.⁸⁷ Abū al-Faraj ‘Alī al-Ḥusain ibn Hindūs (d. c. 1029–32) wrote a re-elaboration of Alexandrian materials.⁸⁸

[2] *Art of Medicine*

This is the most cited work of Galen's, alternative titles being *Technē*, *Mikra Technē*, *Microtegni*.⁸⁹ Commentaries, which were lost in the course of the transmission, were written by Stephen,⁹⁰ Palladios, and John of Alexandria.⁹¹ There are extant commentaries by Agnellus,⁹² al-Ṭayyib,⁹³ and Ibn Riḍwān. The latter was translated by Gerard of Cremona.⁹⁴ There are also *tabulae*: Vindobonensis med. gr. 16, fols 332r–336v, and Neapolitanus *Orat.* CF 2, fols 332rff.

[3] *On the Pulse for Beginners*

This elementary book, called by Stephen *Sphygmikarion* (*Little Book on the Pulses*) was commented on by Stephen,⁹⁵ Palladios, John the Grammarian,⁹⁶ Agnellus of Ravenna,⁹⁷ and later al-Ṭayyib,⁹⁸ who draws on many Alexandrian sources. The Arabic summary is very rich. The *tabulae* can be found in Vindobonensis med. gr. 16, fols 339r–340v.

[4] *Therapeutics to Glaucon* (two books)⁹⁹

Stephen wrote a commentary on the first book (on fevers),¹⁰⁰ and an anonymous commentary of the same book exists in Latin, transmitted together with Agnellus' commentaries on *On Sects for Beginners*, *Art of Medicine*, and *On the Pulse for Beginners*. The Arabic summary of both books is the richest in the collection.¹⁰¹ It is frequently quoted in al-Rāzī's *Comprehensive Book on*

86 Sezgin (1970: 159).

87 Garofalo (2008b).

88 See Overwien (2015).

89 Boudon (2000: 274).

90 Stephen, *Commentary on Hippocrates' Aphorisms*, ed. Westerink (1995) 281, index.

91 If the Introduction of the commentary edited by Pritchett (1975) is indeed his.

92 Nicoletta Palmieri is preparing the edition.

93 See Garofalo (2008b).

94 See Garofalo (forthcoming).

95 Stephen, *Commentary on Hippocrates' Aphorisms*, ed. Westerink (1992) II.76.9.

96 See Garofalo (1999b).

97 See Palmieri (2005).

98 Sezgin (1970: 82). On this Christian physician (d. 1043), see Ullmann (1970: 156ff).

99 See Peterson (1974) and Garofalo (1994).

100 Edition by Dickson (1998).

101 It has the mysterious title *To Glaucon on Nature* in Princeton Garrett 1075 reproduced by Sezgin (2001) and bibliographical entry.

Medicine (*Kitāb al-Ḥāwī*). There is also the *tabulae* in Vindobonensis med. gr. 16, fols 337r–338v. Al-Ṭayyib also commented on *Therapeutics to Glaucon*.¹⁰²

[5], [6], [7] *On the Elements According to Hippocrates, On Mixtures, On the Natural Capacities* were called *Physikē* by Stephen and *Fisica* by John of Alexandria.¹⁰³ There are surviving scholia in Greek.¹⁰⁴ There are also summaries in Arabic of *On the Elements According to Hippocrates*,¹⁰⁵ *On Mixtures*,¹⁰⁶ and *On the Natural Capacities*.¹⁰⁷ The commentary by John the Grammarian was translated into Arabic,¹⁰⁸ and al-Ṭayyib commented on these works, except of *On the Natural Capacities*.

[8] Anatomy

*On Bones for Beginners, On the Anatomy of Veins and Arteries, On the Dissection of Muscles, On the Anatomy of Nerves, Anatomy of Veins and Arteries*¹⁰⁹

The collection was called *anatōmai*. Stephen commented on it,¹¹⁰ and the Ambrosian commentator of the *Therapeutics to Glaucon* calls them *anathōmica*.¹¹¹ None of them survive. There are Arabic summaries on the two books of the *Therapeutics to Glaucon*. They were also commented on by al-Ṭayyib.¹¹²

[9] *On the Causes of Symptoms* (3 Books), *On the Different Kinds of Disease, On the Causes of Disease, On Distinctions in Symptoms*

These works were assembled by the Alexandrians under the title *On the Cause* (*Peri Aitias*). The single books are quoted as first, second, and so on, of *On the Cause*. They were commented on by John the Grammarian.¹¹³ There are

102 Same manuscript of the Manisa 1772, cf. n.80.

103 Stephen, *Commentary on Hippocrates' Aphorisms*, ed. Westerink (1995) 279, index.

104 Edited by Helmreich (1910) and Moraux (1977).

105 Sezgin (2001) I.295–329.

106 Sezgin (2001) I.383–434.

107 Sezgin (2001) I.330–82.

108 Sezgin (1970: 87).

109 According to Ḥunayn ibn Ishāq, the Alexandrians divided the book into two parts: *Anatomy of Veins* and *Anatomy of Arteries*. The Arabic tradition follows this division, not the Greek tradition; see Garofalo's edition (2008a).

110 Stephen, *Commentary on Hippocrates' Aphorisms*, ed. Westerink (1995) 281, index.

111 See Palmieri's edition (1981) 252.

112 Sezgin (1970: 85). It is preserved in many manuscripts.

113 Sezgin (1970: 90).

also surviving *tabulae* of the six books (mutilated at the end of the sixth) in Vindobonensis med. gr. 16, fols 341v–359v.¹¹⁴

[10] *On Affected Parts*

The Alexandrian title for this work was *Diagnostikē*.¹¹⁵ There is also a surviving summary in Arabic,¹¹⁶ and a compendium by al-Ṭayyib is preserved in Tehran Majlis 3974.¹¹⁷

[11] *On the Different Kinds of the Pulse, On Diagnosis by the Pulse, On the Causes of the Pulse, On Prognosis by the Pulse*

The great treatise of pulses, in sixteen books, was not read and commented on in its entirety,¹¹⁸ only the first book of each work. The summaries in Arabic also only concern the first book of each work.¹¹⁹ The synopsis of the great treatise is not preserved.

[12] *On Crises*

There is a surviving summary of this work in Arabic and a compendium by al-Ṭayyib.¹²⁰

[13] *On Critical Days*¹²¹

The summary survives in Princeton Garret 1075, fols 12ff. (not reproduced by Sezgin 2001), and Tehran Majlis 6037. The Arabic-Hebrew version has recently been edited.¹²² The synopsis by John the Grammarian is also preserved in Arabic.¹²³

114 On the fortune of the books, see Gundert (1998).

115 See Garofalo (1995). This is also provided by Cassius Felix as Overwien (forthcoming) notes.

116 Sezgin (2001) II.246–331.

117 Sezgin (1970: 91).

118 Ḥunayn ibn Ishāq, *Risālah*, ed. Bergsträsser (1925) 13 = 18, ed. Lamoreaux (2016) 29–33.

119 Sezgin (2001) II.332–62 (from Princeton Garrett 1075). The manuscript has many flyleaves with quotations from the books of Galen *On the Pulse*.

120 Sezgin (2001) I.540–79 and Sezgin (1970: 95), respectively.

121 The order *On Crises* and *On Critical Days* in John the Grammarian's synopsis, in the manuscript of the summaries, and in Ḥunayn's *Risala* is the inverse of the chronological order in which Galen composed the two books – *On Critical Days* before *On Crises*.

122 Bos and Langerman (2015).

123 Sezgin (1970: 149), British Library Arundel Or. 17, fols 131ff.

[14] *On the Different Kinds of Fevers*¹²⁴

John the Grammarian and al-Ṭayyib both commented on this work.¹²⁵ A summary survives in Arabic.¹²⁶ The synopsis by Palladios *On Fevers* offers a re-worked version,¹²⁷ similar to the opusculum *On the Pulses* by Palladios/Stephen (see above [3]).

[15] *On the Preservation of Health*

The summary survives in Princeton Garrett 1075, fol. 156v (not reproduced by Sezgin, 2001). The synopsis by John the Grammarian is also preserved in Arabic.¹²⁸

[16] *Therapeutic Method*

The summary in Arabic survives in Princeton Garrett 1075, 116 (not reproduced by Sezgin, 2001), and is called by Stephen *Megalē Therapeutikē*.¹²⁹ Ḥunayn did not find the summaries of half of books 7 and books 8 through 14 and replaced them with the second book of the *Synopsis of the Therapeutic Method* of the same books, a work that is lost in Greek.¹³⁰ Ḥunayn translated two summaries of books 2 and 3. The synopsis by John the Grammarian is preserved in Arabic.¹³¹

There is also a surviving commentary by al-Ṭayyib,¹³² which was copied almost verbatim (books 1–6) from the summary. It is noteworthy that book 7 of al-Ṭayyib's commentary does not copy the summary. We are unable to compare al-Ṭayyib's commentary on books 8–14, since the relevant summaries do not survive. The commentaries on the single books are divided into lectures (*ta'limāt*), and the single lectures are divided in questions (*muṭṭabāt*). Each book has a short list of contents at its beginning.¹³³ The technical vocabulary of al-Ṭayyib is sometimes different from the vocabulary of the summary and

124 See Garofalo (2003a).

125 Sezgin (1970: 95).

126 Edited by Sezgin (2001) 1.513–29.

127 Garofalo (2003a).

128 Sezgin (1970: 149), British Library Arundel Or. 17, fols 131ff.

129 Stephen, *Commentary on Hippocrates' Aphorisms*, 1.1, ed. Westerink (1985) 44.11; and ed. Westerink (1995) 279, index.

130 See Garofalo (1999a) and (2018). The note is at fol. 109r of the Princeton Garrett 1075. The corresponding place in the *Therapeutic Method* is 7.7, ed. Kühn (1825) X.499.12.

131 Sezgin (1970: 149), British Library Arundel Or. 17, fols 131ff.

132 Leiden Universiteitsbibliotheek, Or. 278/1, fols 1–154.

133 See, for example, Book 5, Leiden Universiteitsbibliotheek, Or. 278/1, fol. 48r: 'His aim in this book is to speak on the treatment of ulcers with symptoms and explains particularly veins and arteries and knowledge of separation of continuity and the first thing he



FIGURE 3.1 Vindobonensis med. gr. 16, fol. 33or

from the translation of the *Therapeutic Method* by Ḥubaysh. Ḥunayn does not include *On the Preservation of Health* among the books read in Alexandria in his *Risālah*, after speaking of the *Therapeutic Method*. The book is dealt with later. The omission has not been explained.

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speaks about in this lecture is enumeration of the things in which there is separation of continuity’.

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Galen in Byzantine Medical Literature

Petros Bouras-Vallianatos

Studying Galen's influence on Byzantine medical literature is a complex task. The main obstacles are the lack of modern critical editions for the majority of the texts and sometimes the complete unavailability of any edition, especially as regards works produced in the late Byzantine period. In addition, Byzantine medical texts have only rarely been subjected to critical examination by modern scholars. Despite the large number of commentaries and summaries of Galenic works produced in Alexandria between the fifth and seventh centuries,¹ this trend did not continue into the later centuries. On the other hand, one sees that medical handbooks for contemporary physicians – such as projects similar to those by Aetios of Amida and Paul of Aegina² – were being produced throughout the entire Byzantine era. In addition to handbooks, the era evidenced the production of monographs on various medical topics, including anatomy, physiology, diagnostics (pulse and urines), dietetics, and pharmacology. This chapter explores the various ways in which Galen was revived in the works of Byzantine medical authors by concentrating on literary output from the seventh/eighth century to the fall of Constantinople to the Ottoman Turks in 1453. It is divided into three sections. The first focuses on texts dealing with Christian anthropology; next is the section that groups texts offering practical instructions in diagnostics and therapeutics; the last section deals with three exceptional cases deemed worthy of being treated separately.

1 Galen and Christian Anthropology

In the late fourth century, the Christian bishop Nemesios of Emesa authored *On the Nature of Man*, which played an important role in the adaptation of the Greek medical tradition by Christian authors in subsequent centuries.³ His work, which was excerpted by authors such as Maximos the Confessor

1 See Garofalo (Chapter 3) in this volume. All translations are mine, unless otherwise stated.

2 On Galen in late antique medical handbooks, see Bouras-Vallianatos (Chapter 2) in this volume.

3 On the reception of Galen by the church fathers, in particular, see Ieraci Bio (2007; 2010).

(580–662), John of Damascus (c. 675–c. 753/4), Anastasios of Sinai (d. after 700), Meletios the monk (ninth[?] century) and Michael Glykas (1125–1204[?]), not only had widespread reception in the Byzantine world,⁴ but it was also translated into Syriac, Armenian, Arabic, Georgian, and Latin.⁵ It consists of forty-three chapters in which the author deals with the nature of human beings, the physiological functions of the various parts of the body, and the relationship between the body and the soul.⁶ According to Nemesios, a human being consists of the incorporeal, intellectual soul and the body, which is made of perishable matter. Nemesios makes occasional use of biblical quotations, but his work is characterised by the extensive and highly eclectic use of earlier pagan sources, for example, adopting either Plato or Aristotle according to his needs. Galen too is among his most common sources.⁷ For the Christian Nemesios – for whom ‘God is shown to be the Creator of everything and to have made everything out of nothing’⁸ – the most attractive Galenic view was the teleological perspective vis-à-vis the structure and function of the human body and its parts by a creative power, a skilful craftsman (*ho dēmiourgos*); a perspective especially developed in the *On the Function of the Parts of the Body*.⁹

Nemesios calls the Pergamene physician the ‘marvellous physician’ and cites him by name six times.¹⁰ Among the explicit mentions of Galenic works, there is a reference to his theory of nine mixtures as outlined in *On Mixtures*,¹¹ with further direct references to *On the Capacities of Simple Drugs*, *On the Function of the Parts of the Body*, and *On the Doctrines of Hippocrates and Plato*. A notable Galenic foundation is indeed traceable throughout the entire treatise.¹²

4 See Morani (1981: 101–51).

5 See Morani (1981: 3–49, 180–98).

6 On Nemesios’ anthropology, see Siclari (1974). See also Sharples and van der Eijk (2008: 7–17) with references to earlier studies.

7 Galen himself was critical of Christian views on miracles, but he was interested in Christian moral values. See Gero (1990); and van der Eijk (2014: 349–60). On Galen as one of Nemesios’ sources, see Sharples and van der Eijk (2008: 20–1).

8 Nemesios, *On the Nature of Man*, 5, ed. Morani (1987) 53.18–19. Tr. by Sharples and van der Eijk (2008: 98).

9 For an introduction, see Flemming (2009).

10 Nemesios, *On the Nature of Man*, 2, 2, 7, 13, 21, 25, ed. Morani (1987) 23.24, 37.10, 58.14, 70.13, 82.7, 86.22.

11 Nemesios, *On the Nature of Man*, 2, ed. Morani (1987) 24.14–17. Galen, *Temp.*, 1.8, ed. Kühn (1821) 1.559.2–9 = ed. Helmreich (1904) 31.27–32.4. According to Galen, there is one kind of mixture, the ideal one, which corresponds to *eukrasia*, and eight kinds of *dyskrasiai* or bad mixtures.

12 Morani (1987: 139–40) identified seventy Galenic passages. See also Sharples and van der Eijk (2008: 242–6).

Interestingly, Nemesios was the first author to describe the localisation of the three mental functions in the ventricles of the brain (sensation and imagination in the anterior cavities, intellectual thought in the central cavity, and memory in the posterior cavity of the brain),¹³ based on the Galenic physiological precept that the brain constitutes the instrument for the activities of the soul, thus presenting a spatial elaboration of Galen's theory. Nevertheless, Nemesios' use of Galenic material is not totally uncritical. For example, in line with his Christian background, he appears eager to reject Galen's materialistic views on the soul, as developed in his treatise *The Capacities of the Soul Depend on the Mixtures of the Body*.¹⁴

Having taken a quick look at the early appropriation of the Galenic material in a Christian context by Nemesios, I will now turn to Byzantine works on the constitution of the human body, such as those by Theophilos and Meletios the monk. Unlike Nemesios' text, these works deal mostly with the anatomical and physiological description of the human body and its parts, without significant philosophical elaborations. The precise dating of works by Theophilos and Meletios is uncertain. Theophilos (seventh or ninth century),¹⁵ can probably be identified as the author who wrote other medical works, including *On Urines* and *On the Pulse* (see Section 2, below). His *On the Constitution of Man* is heavily based on the teleological explanations of the human body Galen gave in his long work *On the Function of the Parts of the Body*, and is constantly elaborated by references to the Christian God (*dēmiourgos theos*), who structured the human body with wisdom (*sophia*) and providence (*pronoia*).¹⁶ Book 1 deals with the limbs, book 2 with nutrition, book 3 with respiration, book 4 with the head, brain, and the sensory organs, and book 5 with the spine and the reproductive organs. Each book corresponds with particular sections of the 'wise physician's' (i.e. Galen's) *On the Function of the Parts of the Body* (= *UP*),¹⁷ in the form of either direct quotations or brief summaries (book 1: *UP* 1–3;

13 See Manzoni (1998: 142–4); and recently van der Eijk (2008). A close parallel to this theory is found on a fragment by Posidonius of Byzantium (fl. end of the fourth century AD), which survives in the work of Aetios of Amida, *Tetrabiblos*, 6.2, ed. Olivieri (1950) 11.125.16–20; see Rocca (2003: 246).

14 Nemesios, *On the Nature of Man*, 2, ed. Morani (1987) 23.24–26.9. On this, see Boudon-Millot (2005: 75–6).

15 For a recent summary of the *status quaestionis*, see Grimm-Stadelmann (2008: 36–42).

16 Among the many references, see, for example, Theophilos, *On the Constitution of Man*, 1.13, 3.14, 4.22, ed. Grimm-Stadelmann (2008) 133.25, 176.14, 159.6. On Theophilos' work, I refer to the recent critical edition by Grimm-Stadelmann. Before this, the work was accessible through the outdated edition by Greenhill (1842).

17 Theophilos, *On the Constitution of Man*, 4.15, ed. Grimm-Stadelmann (2008) 172.11.

book 2: *UP* 4–5; book 3: *UP* 6–7; book 4: *UP* 8–11; and book 5: *UP* 12–15; nothing directly corresponds to book 16 of the Galenic text in Theophilos' work).¹⁸ Isabel Grimm-Stadelmann has shown that throughout the treatise, some chapters echo other works by Galen, most notably *On the Natural Capacities*, and also Nemesios' *On the Nature of Man*, while biblical quotations are rare.¹⁹ Interestingly, there are also many direct quotations from the Hippocratic corpus, including, for example, *On Generation*,²⁰ and *On the Nature of the Child*.²¹

More fascinating in terms of the assembled material is certainly Meletios' (ninth[?] century)²² *On the Constitution of Man*. This work on human anatomy and physiology follows an *a capite ad calcem* structure over thirty-three chapters. It was exceptionally widely disseminated, attested by approximately sixty witnesses dated to the late Byzantine and post-Byzantine periods (i.e. the thirteenth to the eighteenth century).²³ What is known of the author comes from his preface, in which Meletios appears to be a monk at the monastery of the Holy Trinity in the Phrygian city of Tiberiopolis,²⁴ a man with some medical knowledge and the ability to practise, including performing venesections and cauterisation.²⁵ Unlike the works of Nemesios and Theophilos, Meletios' text is clearly written for the non-expert, someone with very limited knowledge of philosophy and medicine. He refers to his medical sources in his introduction naming Hippocrates, Galen, and an otherwise unknown Socrates, the source of the etymologies of the parts of the human body,²⁶ which seems to be a corrupted version of the name of the famous ancient Methodist physician Soranus (second half of the first century/early second century AD), who

18 See Grimm-Stadelmann (2008: 42–7). It is worth noting that Theophilos' text, in the form of Greenhill's edition (1842), is listed in Helmreich's (1907: I.xi) sigla in his critical edition of Galen's *On the Function of the Parts of the Body*. Galen's *On the Function of the Parts of the Body* met also a considerable reception in the medieval Islamic world; see Wakelnig (2018).

19 See Grimm-Stadelmann's *apparatus fontium* (2008: 205–76) *passim*.

20 E.g. Theophilos, *On the Constitution of Man*, 5.30, ed. Grimm-Stadelmann (2008) 197.25–198.13; [Hippocrates], *On Generation* (*De Gen.*), 6–8, ed. Littré (1851) VII.478.1–11 and 478.16–480.9 = ed. Potter (2012) 14.21–16.8 and 16.14–18.9.

21 E.g. Theophilos, *On the Constitution of Man*, 5.30, ed. Grimm-Stadelmann (2008) 200.18–23; [Hippocrates], *On the Nature of the Child* (*Nat. Puer.*), 30, ed. Littré (1851) VII.530.20–532.1 = 19, ed. Potter (2012) 80.23–82.5.

22 See Holman (2008: 79–82), who provides the most recent overview on Meletios' dating.

23 See the most recent list at Pinakes <http://pinakes.irht.cnrs.fr/notices/oeuvre/3275/> (accessed 17 March 2018), including both complete and excerpting manuscripts of the work.

24 Meletios, *On the Constitution of Man*, pr., ed. Cramer (1836) 1.5–8.

25 Meletios, *On the Constitution of Man*, 33, ed. Cramer (1836) 155.6–11.

26 Meletios, *On the Constitution of Man*, pr., ed. Cramer (1836) 1.15–22.

wrote a lost work on medical etymologies.²⁷ The Galenic work most often directly cited is *On Bones for Beginners*, followed by the pseudo-Galenic *Medical Definitions*.²⁸ He also made use of *On the Function of the Parts of the Body* and *On Mixtures*,²⁹ although these works mostly seem to have been cited through *On the Nature of Man* by Nemesios,³⁰ whose work is cited considerably,³¹ but this is not explicitly acknowledged in Meletios' preface. There is very limited use of quotations from Hippocrates, and what there are come mainly from *On Nutrition*.³² Meletios also refers to his Christian sources in his introduction, including Basil the Great (c. 329–379), Gregory of Nyssa (335/40–d. after 394), John Chrysostom (340/50–d. 407), and Cyril of Alexandria (378–444).³³ Robert Renehan has also detected to a lesser degree the influence of Maximos the Confessor and Gregory of Nazianzos (329/30–c. 390) on Meletios.³⁴

In terms of associations with Meletios, one must also consider a brief work by Leo the Physician, *Epitome on the Nature of Men*, which is actually an abridged version of Meletios' text, amounting to about one-sixth the length of Meletios' work.³⁵ There is no extant information about Leo's (ninth [?] century) life and career, apart from the fact that he was also the author of the brief *Synopsis of Medicine* (see Section 2, below).³⁶ In a recent study of Meletios' *On the Constitution of Man* and Leo's *Epitome on the Nature of Men*, Erika Gielen has shown that these two authors should not be considered mere compilers of previous material, because they had each carefully selected their sources to fit their respective audiences.³⁷ In brief, Meletios often combined Galenic or pseudo-Galenic excerpts with quotations from the Christian fathers to suit the taste of his contemporary Christian audience, while Leo substantially abridged Meletios' account, eliminated most of the Christian references, and turned his

27 See Renehan (1984: 160–1); and Gielen (2018: 157). On Soranus' lost work, see Hanson and Green (1994: 1021–4).

28 Jutta Kollesch (1973: 60–6) dates this pseudo-Galenic treatise to the late first century AD.

29 Helmreich (1918).

30 Grimm-Stadelmann (2008: 60–1).

31 Morani (1981: 132–50).

32 See Ieraci Bio (2005: 35), who discusses Meletios' references to the *On Nutrition* (*De alimento*) with reference to his compiling techniques. For the influence on Meletios of Alexandrian commentaries on Hippocrates and Galen, see Ieraci Bio (2003).

33 Meletios, *On the Constitution of Man*, pr., ed. Cramer (1836) 1.22–6. Robert Renehan (1984: 161, n.15) was not able to detect a passage from Cyril.

34 Renehan (1984: 161). On Gregory of Nazianzos as one of Meletios' sources, see also Gielen (2018: 155). Holman (2008: 88–90) suggests that Paul of Aegina or Oribasios might also be among his sources for some passages.

35 Renehan (1969).

36 On Leo, see Ieraci Bio (2006: 787–91, 794–9) with references to earlier studies.

37 Gielen (2018).

text into the popular didactic form of *erotapokrisis* (question and answer) in an attempt to address, most probably, an audience of beginners in medicine.³⁸ In one of the most interesting cases examined by Gielen, Meletios, in chapter 1, discussing cranial sutures, introduced a quotation from Galen's *On Bones for Beginners*, a text self-evidently intended for those at the beginning of their medical education. Meletios abridged the Galenic passage, including only the most essential information, namely mentioning only two of the four kinds of skulls in the original Galenic account. He then drew a distinction between the cranial sutures of men and women, which was not mentioned in Galen, and introduces a passage from Aristotle's *History of Animals* to support his statement. Finally, in his attempt to impart Christian connotations to the description of the sutures, he explained that the three sutures of the male head are connected to the three figures of the Holy Trinity, while the one circular suture of the female head is connected to the 'circular' universe and the 'infinity' of the one 'divine power'. Although the source of this last passage has not been identified, it is clear that Meletios was attempting to make the Galenic anatomical account familiar to his non-expert Christian audience. Leo, on the other hand, abridged Meletios' account, thus keeping only some basic terms from Galen's initial description and removing any theological connotations. Most interestingly, he added extra anatomical information in the form of a brief phrase, thus revising Meletios' text to serve his intended readers, who were presumably interested in receiving purely medical details in an easily memorable form. The actual re-use and further re-working of the Galenic excerpt on Leo's part is proof of the conciseness and also the flexibility of the Galenic account, especially when dealing with merely descriptive material, as in the case of human anatomy.

2 Galen in Byzantine Diagnostics and Therapeutics

In the absence of modern microscopic techniques, Byzantine physicians mainly based their diagnosing and prognosticating of disease on the examination of the pulse and urines.³⁹ Both topics were treated in a large number of specialised treatises by Byzantine physicians. Theophilus, in the preface of his extremely influential treatise *On the Pulse*, makes special mention of the 'most marvellous physician', Galen, and his sphygmological treatises (i.e. *On the Different Kinds of the Pulse*, *On Diagnosis by the Pulse*, *On the Causes of the*

38 On Byzantine cases of instruction by question and answer, see Papadoyannakis (2006).

39 For an overview, see Bouras-Vallianatos (2015a: 109–12).

Pulse, On Prognosis by the Pulse, On the Pulse for Beginners).⁴⁰ Galen made the first notable codification of the ancient knowledge on the subject, informed by his rich clinical experience.⁴¹ The reception of Galenic knowledge on the subject by Theophilos and other Byzantine authors is not always as straightforward as it might seem. For example, Galen, in his *On the Different Kinds of the Pulse*, distinguished among five main categories (*pente genē*) of the pulse.⁴² On the other hand, Theophilos refers explicitly to ten categories (*genē ... eisi deka*),⁴³ a distinction not found in any genuine work by Galen. The vast majority of the terms that are used by Theophilos are also found in Galen's account, but the latter often does not take a straightforward position on whether the identification of other characteristics represents an additional category.⁴⁴ The distinction of the ten categories is also found in the work of the late sixth-/early seventh-century medical author Paul of Aegina.⁴⁵ It also appears later on in the works of Byzantine authors, such as Michael Psellos (1018–c. 1076),⁴⁶ and in various brief works on the pulse ascribed to Galen that should clearly be dated to the late Byzantine period.⁴⁷ Yet, it is not obvious from which ancient work this distinction was derived. For example, it was already found in an early pseudo-Galenic treatise on the topic, namely *On the Pulse, to Antonius*,⁴⁸ and

40 Theophilos, *On the Pulse*, ed. Ermerins (1840) 9.11–11.9.

41 On Galen's pulse theory, see Harris (1974: 397–431).

42 Galen, *Diff. Puls.*, 1.3–9, ed. Kühn (1824) VIII.500.6–522.18. According to Harris' interpretation (1974: 401), the variations of the pulse in Galen's account can be classified in five classes according to the size, strength, speed of every single movement of diastole or systole, frequency, and hardness or softness.

43 Theophilos, *On the Pulse*, ed. Ermerins (1840) 11.14–33.12.

44 See, for example, the case of full (*plērēs*) and empty (*kenos*) pulse, *Diff. Puls.*, 1.5, ed. Kühn (1824) VIII.508.6–509.17, which is a separate category in Theophilos' account.

45 Paul of Aegina, *Epitome*, 2.11, ed. Heiberg (1921) 1.82.4–88.18.

46 Michael Psellos, *On Medicine*, 9.283–421, ed. Westerink (1992) 200–4.

47 I am publishing a group of these texts, mainly found in fifteenth-century manuscripts, including a study on the development of the classification of different kinds of the pulse in Byzantium in a forthcoming study: Bouras-Vallianatos (forthcoming, a). According to a brief treatise preserved in Laurentianus Plut. 75.7 (twelfth century) and ascribed to Rufus, *On the Pulse*, 8, ed. Daremberg and Ruelle (1879) 231.14–232.5, the theory of ten classes goes back to Archigenes, although this is not confirmed by Galen or any other author. Apart from pseudo-Galenic texts on the pulse, we also find a considerable number of brief texts on urines ascribed to Galen in late Byzantine manuscripts; see, for example, Moraux (1985) and Bouras-Vallianatos (forthcoming, a).

48 Ps.-Galen, *Puls. Ant.*, ed. Kühn (1830) XIX.634.2–637.8. On this text, see Lutz (1940). A condensed version of this treatise, which also contains some diagrams similar to those by Theophilos, appears under the name of the otherwise unknown Philaretos: *On the Pulse*, ed. Pithis (1983).

in the pseudo-Galenic *Medical Definitions*,⁴⁹ although the latter does not provide an explicit numerical reference to the ten categories.

Even more interesting is the engagement of Byzantine authors with the Galenic material on uroscopy.⁵⁰ Theophilos, in his *On Urines* (consisting of twenty-six chapters), acknowledged the importance of Hippocrates and Galen (with a special mention of the latter's *On Crises*) in the development of the examination of urines, but he found the treatment by these ancient physicians incomplete (*ellipē*) and vague (*asaphē*).⁵¹ In fact, examination of urines in the interpretation of a patient's clinical condition never played a central role in the ancient world. In the Hippocratic texts, various characteristics of urine, such as the colour and the presence of sediment (*hypostasis*), are considered. The presence of suspended (*enaiōrēma*) particles and clouds (*nefele*) is also noted, but no clear distinction is made between them.⁵² Galen never wrote a single treatise on the topic, but in his works we can see a definite connection between the production of urine and the digestion (*pepsis*) of food.⁵³ Colour gradually became the index of digestive power and thus an important element in the diagnosis of humoral excess. Theophilos, using Galenic developments on the subject and on the recent work of Magnos (c. fourth/fifth century AD),⁵⁴ extended the spectrum of urinary colours to a total of nineteen, providing considerable detail in terms of variation as, for example, in the case of white. In addition to crystal white (*leukon*) there are three more kinds: milk-white (*galaktōdes*), grey-white (*glaukon*), and greyish-white or grey (*charopon*).⁵⁵

Later on, the late Byzantine physician John Zacharias Aktouarios (c. 1275–c. 1330) took a stance similar to Theophilos', in his own *On Urines*, the most

49 Ps.-Galen, *Def. Med.*, ed. Kühn (1830) XIX.404.1–412.15.

50 On Byzantine uroscopy, see Dimitriadis (1971).

51 Theophilos, *On Urines*, pr. ed. Ideler (1841) I.261.9–18.

52 The most important references are found in the *Aphorisms*, *Prognostic*, and *Epidemics*. For a survey of Hippocratic uroscopy, see Marketos (1994).

53 On Galen's theories about digestion and nutrition, see Cirenei (1961: 29–37) and Debru (2008: 273–5). One of the most detailed treatments of the subject is made in Galen's *Nat. Fac.*, 3.13, ed. Kühn (1821) II.200.6–202.17 = ed. Helmreich (1893) III.246.10–248.7.

54 The work survives today in two different revisions, one edited by Kühn and ascribed to Galen [XIX.574–601; Bussemaker (1847) argues that only chapters 1–28 and 30–36 of this treatise contain the work of Magnos] and an anonymous one edited by Ideler (1842) II.307–16. Magnos is credited with introducing the term *chyma* to describe the urinary liquid, and he refers to a clear spectrum of urine colours (*chroia*) on a scale from white (*leukon*), corresponding to indigestion (*apepsia*), to black (*melan*), related to over-digestion (*hyperoptōsis*).

55 Theophilos, *On Urines*, 7.1, ed. Ideler (1841) I.268.7–8. On the colours *glaukon* and *charopon* in the ancient and late antique literature, see the special study by Maxwell-Stuart (1981), which has a section on Theophilos (1981: I.175–6, II.72–3).

extensive medieval treatise on the subject in seven books, and did not hesitate in the introduction to criticise Hippocrates and Galen for having dealt too briefly with the examination of urines: 'In fact, Hippocrates, the most wise (*sophōtatos*), having said a little of this subject here and there, left the theory [on uroscopy] unfinished (*atelē*). On the other hand, the skilful Galen paid only a little attention to these [i.e. uroscopic theories]'.⁵⁶ This programmatic statement of the inadequacy of the Hippocratic and Galenic contributions is mainly made in order to emphasise John's own treatment of the subject. John made important innovations concerning the examination of urines in his work, for example, the introduction of a graduated urine vial divided into eleven areas, an innovation that was widely taken up in late Byzantium and the West.⁵⁷ He was an erudite Byzantine physician with a deep knowledge of both Hippocrates and Galen, the latter referred to as a 'wise' (*sophos*) physician throughout John's work.⁵⁸ Galen's influence on his treatise is obvious in various parts. For example, John provides acknowledged references to Galen's *On Crises* and *On Critical Days*.⁵⁹ Furthermore, having been influenced by Galen's theories on human digestion, he introduced a more detailed theory, involving four phases compared to the three in the Galenic scheme. John places more emphasis on the role of the liver, thus splitting Galen's second phase into two, one phase taking place in the concave section of the organ and the other in the convex part, respectively.⁶⁰ Thus, Byzantine physicians not only systematised Galenic contributions to the examination of the pulse and urines, they also developed further earlier theories based on their own clinical experience.

Most interestingly, in his *On Urines* John revives the genre of case histories for the first time in the Greek-speaking world since Galen, including eleven examples involving twelve patients. These constitute a distinct element of discourse in his work, in which John describes his experience in dealing with contemporary patients. The use of certain terminology in his accounts often echoes that of Galen. Furthermore, in line with his master, these clinical

56 John Zacharias Aktouarios, *On Urines*, 1.2, ed. Ideler (1842) II.4.31–4. On John, see Kourousis (1984/8), Hohlweg (1983), and the most recent study on his medical corpus in Bouras-Vallianatos (2015c).

57 John Zacharias Aktouarios, *On Urines*, 1.13, ed. Ideler (1842) II.20–2. On John's urine vial, see Bouras-Vallianatos (2015a: 111–12; 2015c: 103–8).

58 John Zacharias Aktouarios, *On Urines*, 6.10, 7.2, ed. Ideler (1842) II.158.23, II.175.1.

59 John Zacharias Aktouarios, *On Urines*, 6.10, ed. Ideler (1842) II.158.22–3; 7.2, II.174.36–175.4; 7.16, 187.20–4; 7.16, 188.8–10.

60 John Zacharias Aktouarios, *On Urines*, 1.5, ed. Ideler (1842) II.8.1–9.12. On this, see Bouras-Vallianatos (2015c: 90–4).

accounts aim to serve a didactic role, in supporting John's theoretical details, as well as to promote John as a most capable physician to his contemporaries.⁶¹

Another issue that we must consider and which also gives us the opportunity to discuss Galen's presence in Byzantine therapeutics is the indirect citation of the Galenic corpus through late antique medical handbooks, such as those by Oribasios, Aetios of Amida, and Paul of Aegina. In particular, Aetios' and Paul's works remained extremely popular throughout the Byzantine period, attested by the large number of surviving copies.⁶² Paul of Nicaea (c. ninth/tenth century),⁶³ Theophanes Chrysobalantes (c. tenth century),⁶⁴ Leo the Physician, and John Zacharias Aktouarios were inevitably influenced by these authors in writing their own medical handbooks. In other words, the way in which the Galenic corpus had been abridged and became available in Late Antiquity regulated access to it in later centuries.

Paul of Nicaea composed his medical handbook in the form of *erotapokrisis* in 137 brief chapters, in which a strong Galenic foundation is noticeable throughout. Some parts may derive directly from Galen's works (*Therapeutics to Glaucón* and *On the Composition of Drugs According to Places*), but the Galenic corpus is mostly cited through the mediation of Oribasios and Paul of Aegina,⁶⁵ two of the most important sources. There are quotations from the Hippocratic *Aphorisms* and *Epidemics*, although in some cases these are most probably derived from the relevant Galenic commentaries.⁶⁶ As Anna

61 On Galen's and John's case histories, see Mattern (2008) and Bouras-Vallianatos (2016) respectively.

62 Mondrain (2012: 621) reports seventy-five and sixty-six complete or partial witnesses to Aetios' and Paul's handbooks respectively.

63 See the discussion on dating by Ieraci Bio (1996: 15–17). The earliest codex dates to the fourteenth century. I find a date after the eleventh century improbable, since the work lacks systematic references to oriental *materia medica* or the use of sugar in the preparation of liquid dosage forms, which became common from the late eleventh/early twelfth century onward.

64 In a large number of manuscripts, the work is dedicated to a certain Constantine Porphyrogenetos, most probably Constantine VII. See Sonderkamp's (1984) discussion of this.

65 See, for example, the chapter on hectic fevers in Paul of Nicaea, *De re medica*, 3, ed. Ieraci Bio (1996) 56.16–43, which derives either from Paul of Aegina's, *Epitome*, 2.31, ed. Heiberg (1921) 105.14–106.8, or the relevant parts of Oribasios', *Synopsis for Eustathios*, 6.21, ed. Raeder (1926) 196.2–26. Paul of Aegina himself most probably based his particular chapter on Oribasios, who in his turn used excerpts from two Galenic works, *On the Anomalous Dyskrasia* and *On the Different Kinds of Fevers*. For more examples, see Ieraci Bio (1992: 135–44).

66 See, for example, Ieraci Bio (1992: 127). Of note, the Hippocratic corpus was being copied up to the late Byzantine period; see Mondrain (2014).

Maria Ieraci Bio has also shown, interestingly, in some parts of Paul of Nicaea's work, he seems to break up Galen's 'monopoly' by using excerpts from Rufus' (second half of the first century AD) *Medical Questions* and *On Satyriasis and Gonorrhoea*, and even the Anonymus Parisinus, either directly or through Philumenus (second/third century AD).⁶⁷

Leo the Physician, presumably writing for his pupil George,⁶⁸ composed the so-called *Synopsis of Medicine*, an epitome in often-aphoristic form in seven books. As Lawrence Bliquez has convincingly argued, the information provided by the author is often insufficient for practising medicine without consulting other works on the topic, presumably the late antique handbooks by Aetios or Paul of Aegina.⁶⁹ Throughout the treatise, there are several named references to specific Galenic works (e.g. *Therapeutic Method*, *Therapeutics to Glaucón*, *On the Different Kinds of Fevers*, *On Affected Parts*) accompanied by a brief summary of some Galenic therapeutic recommendations.⁷⁰ Leo's strong Galenic background is often combined in his work with references to Hippocrates, including the *Aphorisms* and *Epidemics*.⁷¹ One named reference to Archigenes most probably derives from Galen or Aetios of Amida.⁷² His occasional references to invasive surgery, unparalleled in any medical handbook written from the eighth century onwards, do not appear to come from Galen, since he never completed a work on the subject, but from either Aetios of Amida or Paul of Aegina, whose own works were mostly based on such authors as Leonides (c. first century AD) and Antyllus (c. first half of the second century AD).⁷³ The next author, Theophanes Chrysobalantes, wrote his *Synopsis* in an *a capite ad calcem* structure, and it was disseminated extensively throughout the Byzantine and post-Byzantine era. In it, he often cites Galen second-hand, through Paul of Aegina.⁷⁴ Moreover, Paul of Aegina's medical handbook was one of the main

67 On Paul of Nicaea's sources, see Ieraci Bio (1992) and the *apparatus fontium* of Ieraci Bio's edition (1996: 49–231) *passim*.

68 Leo the Physician, *Synopsis of Medicine*, pr., ed. Ermerins (1840) 89.1–4.

69 Bliquez (1999).

70 E.g. Leo the Physician, *Synopsis of Medicine*, 1.5, 1.11, 1.16, 2.2, ed. Ermerins (1840) 95.1–2, 99.21–3, 105.7–8, 111.6–7.

71 E.g. Leo the Physician, *Synopsis of Medicine*, 2.5, 2.6, ed. Ermerins (1840) 115.1–3, 115.11–13.

72 Leo the Physician, *Synopsis of Medicine*, 2.15, ed. Ermerins (1840) 121.14–16; cf. Aetios of Amida, *Tetrabiblos*, 3.180, ed. Olivieri (1935) 1.351.3ff.

73 See Bouras-Vallianatos (Chapter 2) in this volume.

74 It survives in more than fifty codices; see Sonderkamp (1987). The text is only available through an outdated edition by Bernard (1794–5). For a preliminary study on the various versions of the text, see Zipser (2017). For some preliminary comments on his sources, see Sonderkamp (1984).

sources, together with Theophilos' *On Urines*, for Michael Psellos' long poem *On Medicine*, intended for the non-expert.⁷⁵

John Zacharias Aktouarios wrote his *Medical Epitome* for Alexios Apokaukos (the commander of the Byzantine fleet), who had a strong interest in medicine. The work was primarily addressed to *philiatroi* (friends of medicine or amateur physicians).⁷⁶ The first two books focus on diagnosis and the next two on various therapeutic methods. John discusses the diagnosis and therapy of specific diseases following the *a capite ad calcem* tradition. He sometimes excerpted directly from Galenic works, including *On the Pulse for Beginners* and *On Crises*, while at other times he preferred the abridged versions of Galenic works (for example *Therapeutics to Glaucon*) through Paul of Aegina.⁷⁷ The last two books, i.e. 5 and 6, concentrate solely on the composition of drugs (approximately 350 recipes) and are arranged according to the form and place of administration, respectively. John offers a dynamic assemblage of recently introduced Arabic pharmacological material in Greek translation, including Ibn al-Jazzār's (d. c. 980) *Viaticum* (*Zād al-musāfir wa-qūt al-hāḍir*/Gr. *Ephodia tou Apodēmountos*) among his sources,⁷⁸ in combination with traditional Greek and late antique sources, such as Aetios of Amida, Paul of Aegina, and a substantial number of cited excerpts taken directly from Galen's *On the Composition of Drugs According to Places*.⁷⁹

The late Byzantine period also evidenced the gradual replacement of traditional Greek pharmaceutical dosage forms with new ones, as, for example, in the case of replacing honey-based potions with sugar-based ones in line with Arabic innovations in the field. The impact of the transmission of

75 Hohlweg (1988: 45). The most recent critical edition is Westerink (1992: 190–233). See also Stathakopoulos (Chapter 7) in this volume. On Psellos' medical corpus, see Volk (1990).

76 The work is usually cited in the literature by its Latin title, *De Methodo Medendi*. I prefer to refer to it as the *Medical Epitome*, since this title corresponds to the title given in the majority of the manuscripts and fits better with its structure and contents; on this, see Bouras-Vallianatos (2015c: 338–650). The first two books have been published by Ideler (1842: II.353–463). The last four books remain unedited and are only available through the most recent Latin translation of the entire work by Mathys (1556).

77 Bouras-Vallianatos (2015c: 160–206).

78 On the Greek translation of Ibn al-Jazzār's work, which was made in a southern Italian environment before the first quarter of the twelfth century, see the most recent survey by Miguet (2017). Arabic pharmacological lore, based on Galen, supplied the Greek cabinet with new animal and vegetal substances (such as musk, ambergris, various kinds of myrobalan, and sandalwood). It gradually became available in Byzantium through translations from Arabic into Greek from the early twelfth century onwards. On Arabo-Greek medical translations in Byzantium, see Touwaide (2002; 2016).

79 Bouras-Vallianatos (2015c: 207–50).

medical knowledge from the Islamic world to Byzantium is even reflected in the elaboration of works consistently transmitted under the name of Galen, as in the case of *On Procurable Remedies*, in which one finds reference to a julep (*julāb*),⁸⁰ a late Byzantine addition to the text. It is important to note the vast number of references to Galen's name in Byzantine recipe books,⁸¹ and scattered recipes and brief scholia in manuscripts,⁸² which although in most cases were not drafted directly from a Galenic work, clearly belong to the Galenic medical tradition through various stages of mediation.

3 Three Exceptional Cases: Symeon Seth, John Zacharias Aktouarios, and John Argyropoulos

In this section, I will discuss three Byzantine authors whose engagement with Galen is remarkable for different reasons in each case. The first is Symeon Seth, who was active in the second half of the eleventh century in Constantinople.⁸³ He probably came from Antioch and is mostly known for two works: his *Treatise on the Capacities of Foodstuffs*, written for Emperor Michael VII Doukas (r. 1071–78), and his translation into Greek of the Arabic version of a collection of ancient Indian animal fables, *Kalīla wa-Dimna*, done at the behest of the Emperor Alexios I Komnenos (r. 1081–1118). He is also the author of two didactic works on natural philosophy and astronomy – *Synopsis of Inquiries on Nature* and *On the Utility of the Heavenly Bodies* – and the unique, brief *Refutation of Galen*. There is no evidence that Symeon ever practised medicine himself and it seems that he worked as a court astrologer in the reign of Emperor Alexios I.

In his *Treatise on the Capacities of Foodstuffs*, an alphabetical collection listing the properties of 183 different kinds of aliments, Symeon – as he admits in his proem – drafts his material from Greek but also foreign sources, including Persian (*Persōn*), Hagarene (*Agarēnōn*)⁸⁴ – a term used in Byzantine literature to denote Arabs or more generally Muslims – and Indian (*Indōn*).⁸⁵ Among his Greek sources, Galen, Hippocrates, and Dioscorides are referenced by name.

80 Ps.-Galen, *Rem. Parab.*, 3, ed. Kühn (1827) XIV.563.12–564.11.

81 On Galen in Byzantine recipe books, see Zipser (Chapter 5) in this volume.

82 See, for example, two scholia ascribed to Galen in an eleventh-century manuscript of Dioscorides on Mount Athos (Lavra, Ω 75), which was once studied by Christodoulou (1986: 158–9).

83 On Symeon Seth and his works, see Bouras-Vallianatos (2015b: 436–42).

84 See also, Symeon Seth, *Treatise on the Capacities of Foodstuffs*, ed. Langkavel (1868) 61.5.

85 Symeon Seth, *Treatise on the Capacities of Foodstuffs*, ed. Langkavel (1868) 1.1–3.

He often combines Greek with foreign knowledge on specific substances, and he provides descriptions for ingredients that had never before been described in detail in any Greek or Byzantine treatises, for example ambergris and musk.⁸⁶ Unlike his references to Hippocrates and Dioscorides, where he does not question their advice, Symeon displays a critical attitude towards Galen, at least in two cases. He is particularly ironic in one of them, in which he disputes Galen's pronouncement on the taste of small mullets in the *On the Capacities of Foodstuffs*.⁸⁷

Symeon's *Refutation of Galen* is a brief work, belonging to the genre of *antirrhēsis* (refutation), in which Symeon focuses on Galen's theories on human physiology. He makes explicit mentions of Galen's *On the Natural Capacities*, while at times he seems also to have been influenced by particular passages in *On the Function of the Parts of the Body* and *On Semen*. There are seven broad areas in which Symeon criticises Galen's theories, either citing quotations verbatim or paraphrasing Galen. Symeon was either basing himself on Aristotelian views to refute Galen's concepts on the generation of various bodily parts,⁸⁸ or more commonly, he found contradictions throughout the Galenic corpus (as in the cases of the theories on reproduction and conception, and the number of the tunics of the bladder),⁸⁹ although the contradictions might sometimes originate from Galen's insufficient treatment of a certain theoretical statement (as in the cases of the movements of gastrointestinal organs and the causes of nausea).⁹⁰

As I have shown, Symeon's criticism of Galen's theories is not derived from practical experimentation or scientific observation, but is based instead on a close reading of certain Galenic passages.⁹¹ Even when Symeon found

86 Harig (1967).

87 Symeon Seth, *Treatise on the Capacities of Foodstuffs*, ed. Langkavel (1868) 106.15–19: 'I am astonished at Galen, who marvels at those buying large mullets because he thinks that smaller mullets have flesh that is sweeter and easier to digest. Smaller mullets are indeed easier to digest, but not in any way sweeter'. Galen, *Alim. Fac.*, 3.27, ed. Kühn (1823) VI.717.1–6 = ed. Wilkins (2013) 228.3–8. In another striking case, in *On the Utility of the Heavenly Bodies*, Symeon does not even hesitate to call a Galenic statement in *On the Function of the Parts of the Body* an 'untruth': Symeon Seth, *On the Utility of the Heavenly Bodies*, ed. Delatte (1939) 11.119.21–120.5; and Galen, *UP*, 3.10, ed. Kühn (1822) III.241.1–242.8 = ed. Helmreich (1907) I.176.21–177.23.

88 Symeon Seth, *Refutation of Galen*, 2, ed. Bouras-Vallianatos and Xenophontos (2015b) 459.21–461.59.

89 Symeon Seth, *Refutation of Galen*, 3, 4, 5, ed. Bouras-Vallianatos and Xenophontos (2015b) 461.60–462.86.

90 Symeon Seth, *Refutation of Galen*, 6, 7, 8, ed. Bouras-Vallianatos and Xenophontos (2015b) 462.87–463.123.

91 Bouras-Vallianatos (2015b: 442–57).

contradictions in the Galenic corpus, he was unable to suggest new theories. He might have been inspired by cases of criticism in the Islamic world, such as for example, Muḥammad ibn Zakarīyā' al-Rāzī's (d. c. 925) *Doubts About Galen*.⁹² His critique is not comparable to that of Alexander of Tralles, who attempted to demonstrate Galen's inadequacy as regards certain therapeutic recommendations, criticism that was always informed by his clinical experience.⁹³ Symeon addresses a contemporary group of Galen's admirers, including Byzantine physicians and intellectuals, who in Symeon's own words considered Galen 'infallible' and a 'divine creature'.⁹⁴ His text is often pervaded by irony, a literary tool to undermine Galen's authority, accusing him, for example, of having a poor memory.⁹⁵ Symeon's overall intention is to challenge Galen's otherwise virtually unchallenged authority in Byzantium and thus perhaps cause a strong reaction among his contemporaries in an attempt to establish himself as an intellectual authority in the capital. His example was not followed by any other Byzantine physician, and his *Refutation of Galen*, which survives in only one manuscript in contrast to the extremely popular *Treatise on the Capacities of Foodstuffs*, remained rather uninfluential.

The next case concerns the late Byzantine practising physician and medical author John Zacharias Aktouarios, whose works were widely disseminated in late Byzantium. Apart from his *On Urines* and *Medical Epitome*, discussed above, he wrote an extensive treatise dealing with *pneuma* ('air'), *On the Activities and Affections of the Psychic Pneuma and the Corresponding Regimen*, consisting of two books.⁹⁶ The first book provides an introduction to the soul and its capacities and its connection to the body through the *pneuma*, the soul's carrier (*ochēma*), sections in which John follows Neoplatonic philosophical theories on the subject.⁹⁷ These are followed by a detailed discussion of the production

92 Temkin (1973: 118–19) was the first to relate Symeon to al-Rāzī. This suggestion was then contextualised in the framework of Symeon's *Refutation of Galen* by Bouras-Vallianatos (2015b: 447–8). It was also later proposed by Gutas et al. (2017: 96); and discussed with further evidence by Pietrobelli in Cronier et al. (2015: 91–3). Cf. Nutton (2007: 175). On Galen's reception by al-Rāzī, see Koetschet (Chapter 10) in this volume.

93 See Bouras-Vallianatos (Chapter 2) in this volume; and Guardasole (2004).

94 Symeon Seth, *Refutation of Galen*, 9, 1, ed. Bouras-Vallianatos and Xenophontos (2015b) 463.126–8, 459.3–4.

95 Symeon Seth, *Refutation of Galen*, 5, 6, ed. Bouras-Vallianatos and Xenophontos (2015b) 461.83–4, 462.102.

96 The text is available through the rather outdated edition by Ideler (1841: 1.312–86). See also Kakavelaki (2016), who proposed some useful new readings of corrupted passages in Ideler's edition.

97 See Kourousis (1984/8: 416–76) and Hohlweg (1996), who present John's work only from a philosophical point of view, attempting to relate his theories to the writings of some

of the different kinds of *pneumata*. The main focus is on the psychic *pneuma*, which was responsible for consciousness, sensation, and voluntary movement. Here John has often been influenced by Galen's *On the Doctrines of Hippocrates and Plato*. The second book provides a detailed discussion of how adjusting one's daily regimen can help avoid the creation of harmful mixtures, thus ensuring physical and spiritual health. It mainly focuses on diet and includes a long list of foodstuffs and their qualities.

John builds upon Galen, but there are three notable elements that result in a significant departure from Galenic medical theories on the topic. First, John considers not only two or three,⁹⁸ but four distinct kinds of *pneumata*, produced in the stomach, liver, heart, and brain, respectively.⁹⁹ Second, the production of *pneuma* is directly connected to the process of digestion. Moreover, each *pneuma* is assigned two primary qualities (unnamed, 'gastric' *pneuma*: cold and moist; natural *pneuma*: warm and moist; vital *pneuma*: warm and dry; psychic *pneuma*: cold and dry), which allows John to easily correlate various kinds of *pneumata* with the mixtures (*kraseis*) of each part and of the body as a whole. Galen refers rarely to the alteration of *pneuma* (*pneumatosis alloiōsis*) due to harmful humours, without ascribing any particular qualities to the *pneuma* or providing any further details. In John's model, certain elements of one's daily regimen, such as diet, bathing, and sleep, may lead to keeping the *pneuma* in good quality and flow. The systematic classification of qualitative change of the psychic *pneuma* as the object of treatment is John's own innovation. The psychic *pneuma*, for example, which is originally dry and cold, should be kept as fine as possible through the regulation of dryness and coldness in the brain, otherwise its subsequent improper flow can result in sensory impairment.¹⁰⁰

The last case to be examined is that of the late Byzantine intellectual John Argyropoulos (c. 1393/4 or c. 1415–1487) and his circle of students. John Argyropoulos seems to have been a teacher in the Byzantine capital before he went to study philosophy and medicine at the University of Padua from 1441 to 1444. He then returned to Constantinople, but after the fall of the city in 1453, he resided in Florence, teaching Greek philosophy, especially Aristotle. Later on, having converted to Catholicism, he moved to Rome and joined the curia of

Neoplatonic philosophers and the church fathers, and thereby omitting John's medical contributions.

98 Galen accepts the existence of psychic and vital *pneuma*, but he is very reluctant to accept that of the natural *pneuma*; see Rocca (2012).

99 John Zacharias Aktouarios, *On the Activities and Affections of the Psychic Pneuma and the Corresponding Diet*, 1.6, ed. Ideler (1841) 1.321.26–325.8.

100 For a detailed study of John's treatise on *pneuma*, see Bouras-Vallianatos (forthcoming, b).

Pope Sixtus IV (1471–84).¹⁰¹ He is particularly well known for his Latin translations of Aristotle's *Nicomachean Ethics*, Porphyry, and Basil the Great. He wrote in both Greek and Latin, including letters, orations, treatises on theology, and twelve brief *erotapokriseis* (questions and answers).

Among the *erotapokriseis*, four concentrated on human physiology.¹⁰² For them, John Argyropoulos drew his material (especially for nos. 9 and 12) from Galen's *Art of Medicine* and from *On Fevers*, by ps.-Alexander of Aphrodisias.¹⁰³ John Argyropoulos was giving medical lectures to a circle of students, including Anthony Pyropoulos, Manuel Pyropoulos, Demetrios Angelos, John Panaretos, and Andronikos Eparchos, at the *Katholikon Mouseion* of the *Kral xenon*, annexed to the monastery of St. John the Baptist in Constantinople.¹⁰⁴ Some of these students were also involved in the transmission of Galenic treatises, being responsible for the copying of manuscripts,¹⁰⁵ including the famous Codex no. 14 of the library of the Vlatadon monastery in Thessaloniki, preserving *inter alia* the otherwise lost *Avoiding Distress*.¹⁰⁶ John Argyropoulos' teaching was influenced by interpretations of Galenic theories by late-antique Alexandrian scholars.¹⁰⁷ It is remarkable, however, that he seems to have introduced into Byzantium the interpretations of fourteenth- and fifteenth-century Italian scholars, perhaps due to his studies in Padua, as attested, for example, in his use of particular diagrams representing the notion of the range of health (*hygieias platos*) in the *Art of Medicine*,¹⁰⁸ a Galenic text that played a central role in his lectures. Lastly, as Ieraci Bio has shown, awareness of the Italian influences on his work has been further heightened by evidence in an unpublished short commentary on the prologue of Galen's *Art of Medicine* preserved in Vaticanus gr. 285, a codex connected with members of John Argyropoulos'

101 On John Argyropoulos' career, see Geanakoplos (1974). See also Ganchou (2008).

102 The title could be translated as *Solution to Some Questions and Inquiries Requested by One of the Cypriot Philosophers-cum-Physicians*. The medical answers are found in nos. 9–12, ed. Lampros (1910) 162.6–174.8. For a brief, introductory study, see Touwaide (1999).

103 Ieraci Bio (2009; 2013: 788–92).

104 Mondrain (2000).

105 Mondrain (2003; 2010); see also Degni (Chapter 6) in this volume.

106 Pietrobelli (2010).

107 Ieraci Bio (2013: 793–5).

108 Galen, *Ars. Med.*, 4, ed. Kühn (1821) 1.316–17 = ed. Boudon (2000) 284–5. See Ieraci Bio (2013: 795–8) with references to the earliest studies on this. Pietrobelli (2010: 104) argues that variations in the diagram in different manuscripts are not due to variations caused by copying from an original model, but bear witness to the actual notes taken by different students during the lectures of the same course.

circle, in which the commentator seems to be aware of contemporary debates in Italian university circles.¹⁰⁹

4 Conclusion

Byzantine medical literature was profoundly influenced by Galenic material. Depending on the subject matter, certain Galenic works – including, for example, *On the Functions of the Parts of the Body*, *Therapeutics to Glaucón*, and the Galenic pharmacological works on composite drugs – remained particularly popular throughout the Byzantine era, as attested to by their widespread use in Byzantine works on human physiology and in Byzantine therapeutic manuals. An important point that has emerged from this examination is the significance of the selections made from, and abridgments of, the Galenic corpus by late antique authors, including Aetios of Amida and Paul of Aegina, since it was through these authors' medical handbooks that Galen was often cited second-hand by Byzantine authors. The Hippocratic corpus was mostly cited through Galen, rarely directly,¹¹⁰ and in most cases Hippocrates' name was used to give authority to the works of Byzantine medical authors. Furthermore, some scattered citations to other ancient authors in most cases derived from late antique medical handbooks. From the twelfth century onward, however, Greek translations of Arabic works became available in Byzantium, supplementing the Byzantine (Galenic) pharmacology with new forms of drugs and substances from Asia.

The Byzantine era also provides evidence of the adaptation of Galen to a Christian context. Unlike with late antique authors, who abridged the Galenic account and combined it with excerpts from other medical authors in a variety of ways, in the cases of Theophilus and most notably Meletios the monk, one finds an extra level of re-working, a reconfiguration of Galen's text, to make it part of an emerging Christian tradition on human anthropology. Galen continued to be considered a 'divine' figure throughout the Byzantine period, with only one notable case of his idealised portrait being challenged, by Symeon Seth, although this independent approach was not marked by the introduction of any new concepts. Beyond the simple re-working or adaptation of the Galenic material, Byzantine authors who based themselves for the most part on Galenic knowledge, sometimes also developed their own theories, as in the case of John Zacharias Aktouarios, whose contributions in the field

109 Ieraci Bio (2010b); Ieraci Bio (2013: 798–802).

110 For some scattered examples, see Ieraci Bio (2014).

of uroscopy and human physiology complemented and extended the corresponding Galenic theories. Lastly, John Argyropoulos' systematic efforts to revive Galenic medical teaching in the fifteenth century were accompanied by an extraordinary level of cross-fertilisation between Italian and Byzantine medical knowledge.

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Galen in Byzantine *iatrosophia*

Barbara Zipser

Within the academic community there are a number of common and widespread prejudices about the nature of *iatrosophia*. *Iatrosophia* are usually regarded as vernacular compilations of medical texts lacking structure or intellectual value and being of a purely practical scope. In addition, because they are often transmitted in only one manuscript, *iatrosophia* are viewed as ‘dead ends’ of the transmission. Even though these views capture some characteristics of the majority of known *iatrosophia*, they hardly suffice in defining a genre. For instance, a number of texts fit the description but are not called *iatrosophia*. Moreover, there are texts called *iatrosophia* that do not fit this description.

Because of these very basic problems in understanding the genre, it is necessary to take a look at the evidence to determine what *iatrosophia* actually are before examining the reception of Galen in such works.¹ With such a large and amorphous group, it is difficult to select representative examples. In the end, two texts were chosen because they present different ends of the spectrum: (a) an organised text of relatively high quality, and (b) a disorganised text of lower quality. Both of these texts have been labelled an *iatrosophion* by the scribes who copied the volumes, so that we can be sure that we are indeed working with the correct material. Moreover, these primary sources have been digitised, so anyone interested can conduct further research and form their own opinions. This will then be followed by a brief discussion of three

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- 1 Only a few articles have been published on the nature of *iatrosophia*. Amongst these, the most influential are the works of Ieraci Bio, who connects *iatrosophia* to hospitals. See in particular Ieraci Bio (1982: 33–43), where the text designated sample (a) in this chapter is discussed. This characterisation was then explored further by, for instance, Oberhelman (2015: 133–46), who identifies *iatrosophia* as recipe collections, and Congourdeau (2002: 64), who equally describes *iatrosophia* as recipe collections mainly used in hospitals. Moreover, influential publications on the nature of *iatrosophia* have included Touwaide (2007: 147–74), who likens *iatrosophia* to therapeutic manuals; Garzya (2003: 165–72), who provides the most in-depth analysis of content, structure, and the problems posed in editing these texts; and Tselikas (1995: 57–70). Marchetti (2011: 121–6) offers an interesting twist, namely that *iatrosophia* became increasingly interdisciplinary over time, including incorporating astrology. The most detailed information on medical texts and manuscripts associated with Byzantine hospitals can be found in Bennett (2003) and its published form, Bennett (2017).

other texts: sample (c), which has no title as such but has been described as an *iatrosophion* by a person who later owned it; sample (d), a post-Byzantine text that resembles an *iatrosophion* but is not actually called *iatrosophion*; and sample (e), an ambiguous text. Again, here the focus is on edited, or at least catalogued material, to ensure transparency. In a final step, the overarching theme of the reception of Galen in *iatrosophia* will be discussed.

Sample (a) is transmitted in Plut. 75.19, a fourteenth-century manuscript held by the Biblioteca Medicea Laurenziana in Florence.² As is often the case, it opens with annotations and a few blank pages. The beginning of the main text, on fol. 5r, is preceded by a large, red scribal heading, the title, that reads, 'An *iatrosophion* with [the help of] the Holy God that contains the definitions and methods of various philosophers and the natural faculties and the therapies of various diseases. And then also [excerpts] from the book on therapy of Cyranides. In these [chapters] also about foodstuff in alphabetical order'.³

There follows the heading 'the preface' along with some rather theoretical and abstract discussion on the nature of the medical art. All this gives the impression that is indeed the title of the work, or of the entire codex. Moreover, a later owner certainly thought it was the title of the volume, as he added the following lines to the flyleaf of the codex: 'τοῦτο τὸ ἱατροσόφιον ἔνε τοῦ πάπα Μανουῆλ τοῦ Μαρμαρᾶ' (this *iatrosophion* belongs to Father Manuel of Marmara). Also, the contents mentioned in the title of the *iatrosophion* do indeed appear in the codex, if in a slightly different order.⁴

How would the rest of the book have been perceived by a medieval user?⁵ Roughly speaking, the volume contains some general information on abstract topics, such as the nature of the healthy body, on fol. 6r, and the optimal

2 This codex has been digitised and can be accessed via the homepage of the Biblioteca Medicea Laurenziana, at <http://teca.bmlonline.it/ImageViewer/servlet/ImageViewer?idr=TECA0001109274&keywords=plut.75.19#page/15/mode/iup> (accessed 29 October 2017).

3 The Greek original reads, 'ἱατροσόφιον σὺν θεῷ ἀγίῳ περιέχων διαφόρων φιλοσόφων ἔρους τε καὶ μεθόδους δυνάμεις τε φύσεων καὶ θεραπειᾶς διαφόρων νοσημάτων. Ἐτι τε καὶ τῶν ἐκ τῆς τοῦ Κοιράνου βίβλου ἀποθεραπευτικῶν. Ἐν οἷς καὶ περὶ τροφῶν κατὰ ἀλφάβητον'.

4 The most convenient way to check the content is Bandini (1770: 166–8). This catalogue has been digitised and can be found in the online catalogue of the Biblioteca Medicea Laurenziana. A number of articles discuss specific aspects of these excerpts as well. The Pinakes database of the IRHT Paris provides a bibliography that is being progressively updated. See <http://pinakes.irht.cnrs.fr/> (accessed 29 October 2017). In addition, the bibliography maintained by the Biblioteca Medicea Laurenziana can be accessed via the library catalogue. See for instance Ieraci Bio (2003: 28ff). The most comprehensive overview, however, is provided in Bennett (2017: 81–106).

5 This should actually be the research question for the present chapter. The question of how the content of this book relates to the broader context of medical book production is discussed by Bennett (2017: 81–106). The question of its (mainly ancient) sources has been

constitution of the body, on fol. 7v. This thematic section even includes diagrams on fol. 11r. There are more diagrams throughout the codex. After a few more chapters on similar topics, an ornament on fol. 12r marks the beginning of a new section on urine diagnosis. At around fol. 26r, the focus seems to shift subtly to blood and the four humours. At fol. 27r, the codex begins to discuss the nature of the cosmos and man, and at fol. 28r embryology. Following a chapter on life cycles, ornaments mark the beginning of another section, this time on foodstuff, in alphabetical order. Sometimes, the start of a new letter is marked by vermilion ornaments, as for instance on fol. 39v. On fol. 42r, the text breaks off at the beginning of a chapter on ginger, and the rest of the fol. remains blank. After this lacuna, the scribe resumes with another letter. The text comes to an end on fol. 82v. After some ornaments, another text begins, this time on therapeutics. The next obvious section can be found on fol. 149r, where, after some vermilion ornaments, an anonymous text on urine starts, followed by another heading: 'therapeutics with the help of the Holy God, selected from various books'. On fol. 158r, an alphabetical lexicon of medicinal plants begins. This text ends on fol. 187v with a bit of page being left blank. An astrological text starts on fol. 168r.

As far as names are concerned, apart from the title referencing Cyranides and unspecified philosophers, the first obvious mention of a source can be found on fol. 8v: '*On the Nature of Man* by Meletios the Monk'. On fol. 10r, the heading 'by Democritos' has been written in the margin by the first hand. The big heading on fol. 12r indicates the start of a new text on urine by Galen. On fol. 30, an abbreviated form of the name Hippocrates can be found in the margin, again written by the first hand. A similar abbreviation stands in the margin of fol. 39r. On fol. 82v, a therapeutic text is attributed to a certain Theophilos, who is said to have excerpted it from various authors, and on fol. 92v, Aetios is mentioned. Amongst some marginal comments, 'of Galen' can be found on fol. 96r. Occasionally, the Hippocratic *Aphorisms* are quoted, in the original dialect, for instance, *Aph.* iv.72 on fol. 150v, but just under the title, without an attribution to an author. These would be the most obvious names in the codex, but a closer look reveals more.

Altogether, one could argue that the manuscript exhibits only a few characteristics of the common preconception of an *iatrosophion*. Admittedly, it is largely a compilation, but it otherwise devotes about the same amount of space to theory as to practice. Most of the content is written in standard, classical or classicising Greek. To describe the text in one sentence, it is a compilation

addressed in several articles, some of which are mentioned above. A full list can be found on the dynamically growing IRHT Pinakes bibliography and the Laurenziana online catalogue.

of various ancient and medieval works that has a fairly well-defined thematic structure. This would have been obvious to the medieval user as well. What is most significant here, however, is that the manuscript does not differ much from most other medical codices. Had it not been for the title, one would hardly call it an *iatrosophion*. It would probably be catalogued as yet another medical manuscript that primarily, but not exclusively, contains compilations.⁶

The second *iatrosophion* to be discussed, sample (b), is of an entirely different nature.⁷ It is a rather disorganised compilation of brief paragraphs, most of which would be about two lines in length in the layout of this volume. Moreover, it is transmitted in more than one manuscript, six to be precise, and it does not comprise an entire volume in any of the witnesses. Rather, it is a separate text, under the heading *iatrosophion*, amongst other texts in a codex.⁸ That said, there is a slight anomaly when it comes to the unity of text. The paragraphs of this *iatrosophion* are numbered, but in all except one witness, the numbering does not start with '1' at the beginning of the *iatrosophion*.⁹ Moreover, the manuscripts do not always present the same text. Even though it is clear that the manuscripts all go back to a single master copy, the scribes made significant changes to the text in the process of copying.¹⁰

Whereas sample (a) covers a broad range of topics, including medical theory, sample (b) has a practical scope, as it mainly focuses on a simplified form of medical therapy. Of the many recipes contained in this collection, only a few are heavily rephrased quotations from famous medical authors of classical and late antiquity, such as Galen, Dioscorides, and Paul of Aegina.¹¹ It is doubtful whether the author of the *iatrosophion* had direct access to manuscripts of these specific works given the low number of parallels and the tendency to rephrase points to an intermediary source or even an oral tradition.

6 It is not uncommon for manuscripts to have a thematic structure; just one example would be Wellcome MS.MSL.14. A substantial proportion of this manuscript is taken up by therapy, partly in the vernacular, and these are the pages of the book that were used most. Yet, it also contains theoretical content. Sample (a) and this manuscript actually have a very similar structure. For details on MS.MSL.14, see the description in Bouras-Vallianatos (2015: 283ff); and Nutton and Zipser (2010: 259–70). Another such sample of a manuscript with a thematic structure would be the Par. Suppl. gr. 1297 of the early tenth century.

7 Alexopoulou (1998).

8 One codex omits the title altogether, see Alexopoulou (1998: 38f).

9 See Alexopoulou (1998: 38ff).

10 For the Barb. gr. 344, see Alexopoulou (1998: 8ff); for the Coisl. gr. 335, see Alexopoulou (1998: 6ff). That the text is transmitted in versions is evident from almost every page of the edition.

11 See, for instance, the *apparatus fontium* of the edition, Alexopoulou (1998: 66, 68, 70).

It would have been difficult for readers to find the material they needed, as this would have required going through a long and disordered table of contents and then trying to find the corresponding paragraph in the main text. The same topic may be covered in more than one paragraph and not always in the same part of the text.¹² Moreover, one could never be sure that the table of contents is accurate. Chapter and paragraph numbering in Byzantine medical texts can be notoriously unreliable, as subheadings can be misinterpreted as chapter headings, new chapters or paragraphs could have been inserted by scribes, or, last but not least, scribes could simply forget to copy a heading. All this could lead to inaccurate numbering. These phenomena are common and were no doubt known to medieval readers.

That this *iatrosophion* does not have a coherent structure is indeed significant, as there was a common and easy-to-understand system for arranging content in therapeutic manuals, the so-called head-to-foot order, *a capite ad calcem*,¹³ and this would also be the system an educated medieval or early modern user of these manuscripts would have expected to find. That the compiler of the collection did not follow this common system leaves one to wonder about his motives and the intended audience. Could this have been a text made solely for the private use of a specific individual that ended up circulating in the mainstream by mistake? Alternatively, would the reader have been expected to read the entire text before making a decision on further medical treatment? Was the author perhaps not familiar with the head-to-foot system? This last possibility would be somewhat surprising, but cannot be excluded.

The next aspect requiring assessment is how names are handled. As Alexopoulou rightly points out, the name of the *iatrosophion*'s compiler remains unknown.¹⁴ The title describes the text as either the '*iatrosophion* of Meletios' or the '*iatrosophion* of Galen, Hippocrates and Meletios'. Here, the Greek is ambiguous. In the first instance, the title could either be interpreted as '*iatrosophion* written by Meletios' or '*iatrosophion* taken from Meletios'. The work does not, however, bear any resemblance to the other transmitted

12 On groups of paragraphs covering the same topic, take for example diseases of the ear (Alexopoulou, 1998: 66, 68, 70). There are hints of a partial head-to-foot order, but overall it is fair to say that the *iatrosophion* does not follow a set order.

13 Many therapeutic manuals follow the *a capite ad calcem* system, that is a text starts with the diseases of the head, such as hair loss, then moves on to migraines, tonsillitis, cough and so on, until reaching the feet. This system might sound unusual today, but it facilitated differential diagnosis if all disorders affecting a specific part of the body were grouped together.

14 See Alexopoulou (1998: 13).

works of Meletios.¹⁵ In the second instance, even if one assumes that it might be referring to another, otherwise unknown Meletios, the *iatrosophion* most certainly does not bear any resemblance to Galen or the Hippocratic corpus either, as far as style and arrangement are concerned. Moreover, even though it is not known precisely when Meletios lived,¹⁶ he clearly post-dates Galen, and most definitely anybody involved in the composition of the Hippocratic corpus, so that the text could not have been compiled by these two authors in collaboration.

The combination of Galen, Hippocrates, and Meletios sounds rather unusual. Whereas Galen and Hippocrates are today regarded as the most important medical authorities of antiquity, Meletios is only known to a handful of specialists. His works, as far as they are known, do not contain groundbreaking, new medical theory. Rather, they reflect earlier ideas with a bit of Christian ideology added to the mix. Overall, they do not seem to be that spectacular today. As this *iatrosophion* shows, however, the perception must have been different at the time, or at least for this particular audience. Meletios must have been regarded as a valid and reliable source. This is supported by the relatively large number of manuscripts transmitting his *On the Constitution of Man*.¹⁷ Perhaps it was his eloquent discussion of earlier sources that made his work particularly appealing to a medieval audience.¹⁸ Another important feature of this *iatrosophion* is that it was written in a vernacular Greek idiom. It is not quite ‘as vernacular’ as sample (d), but it certainly shows strong post-classical features.¹⁹

Sample (c) is a medical compendium without a title as such. Many scholars might dispute whether it should be considered or understood as one coherent text or rather as a series of texts. The only reason it is discussed here is because a later owner called it an *iatrosophion*, on fols 37v and 205v. The codex

15 Alexopoulou (1998: 12).

16 The most recent contribution to the complex discussions about Meletios’ date with related bibliography can be found in Renehan (1984: 159). The main point for the chapter here is that he post-dates the mid-seventh century, whereas Galen lived in the second century.

17 At present, the ever-growing IRHT Pinakes database contains sixty-seven manuscript witnesses of this text; see <http://pinakes.irht.cnrs.fr/notices/oeuvre/3275/> (accessed 29 October 2017). In the context of classical and medieval medical texts, this is a substantial number.

18 The text has been edited twice, first in Cramer (1836) and in Migne (1862). We do not know, to which of Meletios’ works the *iatrosophion* refers, and whether this attribution is even accurate. His book on the constitution of man consists of some introductory material on physiology and embryology; next, the nature of specific body parts is discussed.

19 A detailed analysis can be found in Alexopoulou (1998: 16ff).

in question, Wellcome MS.MSL.60, has recently been catalogued by Petros Bouras-Vallianatos, who provides a detailed breakdown of the content and other information.²⁰

To summarise sample (c) very briefly, the codex opens with rather theoretical texts, the Hippocratic *Aphorisms* and *Prognostic*, before moving on to pharmacy, theoretical texts on the nature of man and the cosmos, the four elements, and embryology. There follows a dictionary and some text on drug substitutes. The next thematic section consists of excerpts discussing sweat, respiration, and digestion, which is then followed by more or less miscellaneous content on measurements, precious stones, prognosis, the calendar, the different ages of persons, more on the nature of the cosmos, some therapy, foodstuff, and, finally, a number of texts on related topics, namely urine and excrements. This is followed by another block of texts on the pulse.

The above is just a paraphrase of how the manuscript would have looked to a reader. Overall, the volume starts with archaic and theoretical texts, before moving on to fairly high-quality content on pharmacology, some more basic theory, and then larger thematic blocks on urine and pulse, interspersed with other content, which is well in line with what one usually finds in Byzantine medical manuscripts. At the time, uroscopy and pulse analysis were important diagnostic methods. To a reader, the manuscript looks fairly chaotic at first sight. It has no title or description of its contents, and the sources are a mixed bag. Some are classical, and some are attributed to big names, including Hippocrates and Galen, on fols 1r and 56r, respectively. On the other hand, the manuscript also contains at least one excerpt that claims to be a Greek translation of Avicenna, on fol. 58r, and some clearly Byzantine content, for instance Nicholas Myrepsos. As far as quality is concerned, the manuscript preserves everything, from excellent to rather basic or average.

One feature of sample (c) is that it contains several texts on the same topic, a choice that might seem illogical to some. If one were to compile a medical handbook, why include several treatises on urine and excrements? Why not choose the most suitable of them and devote the remaining space to something else? It seems that the scribe, or whoever devised the structure of the book, followed some basic preconceptions of what content a medical book should contain, namely Hippocratic works and the basics, such as the nature of man and pharmacology, and then selected a distinctive thematic focus for the rest of the book.

20 Bouras-Vallianatos (2015: 292ff). For a detailed analysis of the content, see also Bouras-Vallianatos (forthcoming).

Sample (d) is by all accounts post-Byzantine, dating to the early twentieth century.²¹ It was composed in the 1930s in a village in Crete, but apart from a few obviously modern linguistic characteristics,²² it very much looks like an *iatrosophion*. It is an unordered list of medical recipes and therapeutic instructions written in a vernacular dialect. The style and language are consistent throughout. The manuscript does not appear to be a compilation at all, but a translation and paraphrasing of simplified Galenic thought, as commonly found in *iatrosophia*. By all accounts, one could easily label this work an *iatrosophion*, as it meets all the common preconceptions of *iatrosophia*. The main catch, however, is its title: 'ἱατρικὸς ὁδηγὸς' (medical guide). Therefore, the editor of the text, Patricia Clark, rightly discusses it in the context of the iatrosophic tradition, rather than an *iatrosophion* in its own right.

There are more examples of texts or codices that one could easily label as *iatrosophia*, as they bear the commonly associated characteristics, but have a different title or do not have a title at all. Sample (e) is one such example.²³ It is a rather early therapeutic manual that has been transmitted in two main versions. Just one of the versions has the title *iatrosophion*, but it is not the version one would expect.

The first version is written in a simplified form of classical Greek, the standard in medieval Greek writings. It consists of a preface that contains basic information on physiology and then a long list of paragraphs on general therapy. The final paragraphs differ in style and content and are most likely later additions. This version has the title '*iatrosophion* of the most wise Galen'.²⁴ In a somewhat stilted style, the text then announces that it is an epitome of the instruction of Galen, who wrote on the affected parts. In other words, it claims to be an epitome of Galen's *On Affected Parts*. In actual fact, this is hardly a correct characterisation. Any similarities between the two works would be extremely superficial. The second version is a vernacular translation of the first version with an added commentary. Here, the word *iatrosophion* is no longer extant, and the text is described as an explanation and commentary of Galen.²⁵ Apart from a mention of Hippocrates in the preface, neither version contains any source attribution.

The chapters of the first version are, apart from the final chapters of course, clearly written by the same person. The second version, apart from perhaps

21 Clark (2011).

22 Clark (2011: 1).

23 Zipser (2009).

24 The designation *iatrosophion* can also be found at the beginning of the pinax, that is the table of contents, of this version; see Zipser (2009: 54).

25 The headings and prefaces can be found in Zipser (2009: 70, 173).

a few dubious passages, has been translated and commented on by the same person. So we can clearly see a great consistency when it comes to philological work on a very substantial scale. As for the content, the first version is lucid and to the point and moderately disorganised. There are some blocks of text that form part of a head-to-foot order, but not throughout the text.²⁶ The second version follows the first, just adding a commentary. The explanations are very basic, and it certainly feels as if it was aimed at the craft end of medicine.

So overall, the analysis here has revealed a number of rather surprising characteristics of *iatrosophia*. Perhaps the most striking is that in sample (e), the designation *iatrosophion* was replaced with the more learned 'translation and commentary', even though in content, style, and scope, the revised version of the text moved very much towards a simplified, practice-oriented vernacular incarnation. Equally surprising is that an *iatrosophion* would contain several texts on the same topic, as in sample (c), which would seem like a waste of space, time, and, therefore to some, money. If one needed a handbook for practical purposes, as opposed to research, why not include as much diverse content as possible?

Another, important finding is that a manuscript may not have a title written on the first page but could still have been regarded as an *iatrosophion* by an owner, as in the case of sample (c). It is certainly worth noting that even though this codex was here treated as an *iatrosophion*, such an approach may be inaccurate at best, as the perception of what an *iatrosophion* actually constitutes may not have been the same for its owners, intellectuals, and scribes. Most certainly, one cannot conclude that a text or codex lacking a title was not intended to be or perceived as an *iatrosophion*. It is quite possible that it would have been understood to be an *iatrosophion* without explicitly stating so, or alternatively, that a title could have been written on a book cover that was then removed or that the title was lost in some other way.²⁷

The most important point that has come to light, however, is that some *iatrosophia* could bend the rules of unity of text and authorship that had been firmly ingrained in the minds of scholars since classical antiquity, by giving an entire volume a title, along with the texts it contains, such as in sample (a), or attributing an entire *iatrosophion* to three different authors without indicating the source in the respective excerpted paragraphs, as in sample (b). This

26 For a list of titles, see Zipser (2009: 330ff).

27 See, for instance, Pérez Martín (2007: 1–18) for analysis of a fragmentary palimpsest dating to around the early thirteenth century. From the description, the text could very well have been an *iatrosophion*, but the transmitted title is *Ιατρικόν* (2007: 8), and the beginning of the first section is missing.

last finding leads to the main issue addressed here – the reception of Galen in *iatrosophia*. It might be best to subdivide it into three questions: Has any genuine Galenic content been transmitted in *iatrosophia*? Have these excerpts been labelled accordingly? What was Galen perceived to be by the compilers and readers of *iatrosophia*?

The answer to the first question is definitely yes, as this occurs in samples (a),²⁸ (b),²⁹ and (c).³⁰ The sources for these quotations are rather diverse, including an introductory text, diagnostics, and therapy. It is therefore not correct to assume that *iatrosophia* solely reflect purely practical elements of Galenic works, such as recipes. To answer the second question, yes, in some cases, these excerpts were labelled individually, but in many others, they were not. They could also be attributed summarily in the title, as in sample (c). The third question is the most difficult to address.

The first and foremost conclusion that can be drawn is that Galen was indeed regarded as a valuable source for *iatrosophia*. This is evident by Galenic content being repeated and sometimes adapted in *iatrosophia*, and also by his name being referenced explicitly in some instances. Content attributed to Galen was not always genuine, however, as evident from sample (e). Even though the text is labelled ‘*iatrosophion* of Galen’ or ‘epitome of the instruction of Galen’, in the title and first lines of the original version, and of his work *On Affected Parts* in particular – one could only argue a rather general similarity, with some degrees of separation. It may be doubted whether the compiler even had access to this Galenic work.

Apart from focusing on any use or mentions of Galen, it is necessary to look at the other non-Galenic sources of *iatrosophia*. Who would have been included or referenced in an *iatrosophion*, and what was their standing? This necessarily concerns the entire spectrum, chronologically and in terms of quality. *Iatrosophia* could contain anything, ranging from idiosyncratic recipes one would normally expect to find scribbled on the flyleaf of a manuscript to highly sophisticated Hippocratic or Galenic medicine, whereas Galenic content would be more predominant amongst the two. They could equally contain late antique or Byzantine authors, some of which may not be transmitted elsewhere, as is for instance evident from sample (a).

28 For instance, fols 5r–12r contain extracts from Galen; see Boudon (2000) for details.

29 See Alexopoulou (1998: 247). The author seems to have excerpted the pseudo-Galenic work *On Procurable Remedies* directly, or at least a good intermediate source.

30 This manuscript contains a number of texts that have been transmitted under Galen's name, but which are probably not genuine. However, to a medieval reader these texts would not have been clearly recognisable as forgeries; see Bouras-Vallianatos (2015: 292ff.) for details.

Galen appears to be just one commonly used author amongst others, leaving one to wonder how the compilers came up with their respective selection. Was it solely influenced by the availability of manuscripts – did the compilers simply use anything reasonable they could access – or were there other considerations? For instance, did a specific author perhaps have particular influence at the place where a certain *iatrosophion* was compiled?

To conclude, at the end of our analysis, we are left with a number of unanswered questions, along with some rather puzzling observations regarding the nature of *iatrosophia* as such. Clearly, one can only take *iatrosophia* into account that are labelled as such, either by a scribe or an owner. Within this group, however, there remain open questions as to how the genre should be defined or whether it is indeed fair to apply the term genre at all.³¹ In the end, one is left wondering whether *iatrosophion* could simply have meant ‘medical codex’ to some and ‘collection of excerpts and entire texts from various medical authors’ to others. Many *iatrosophia* have at least the potential for practical application, which appears to have been a defining feature of this genre. One would hardly call the works of Oribasios *iatrosophia*, even though they mainly consist of excerpts, too, because they would be less tailored for use as a general practice manual.

What has become clearer, however, is the reception of Galen in *iatrosophia*. Evidently, Galen was still regarded as an authority, but he was far from being the sole source of *iatrosophia*. Moreover, Galen’s works could be amalgamated into these new works. The scope of creating an *iatrosophion* was not to create a philologically accurate collection of excerpts with a consistent referencing system. Rather, these excerpts were combined to create a new collection.

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31 I owe this final point, on whether it is accurate to call *iatrosophia* a genre, to Peregrine Horden.

to have at the material themselves. I am grateful to Peregrine Horden for his feedback on a draft of this chapter.

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Textual Transmission of Galen in Byzantium

Paola Degni

The works that manuscript tradition has handed down under the name of Galen and that so far are considered authentic by philological surveys are quantitatively exceptional. It is thought that they represent almost one-eighth of all extant ancient Greek literature production from Homer to the late second century AD.¹ Investigating the transmission of Galen in Byzantium preliminarily requires a methodological distinction. That is, one must distinguish between the reception or diffusion of the treatises produced by the doctor from Pergamum in the textual and material forms testified in the manuscript tradition of the Byzantine period and the influence his ideas had in the field of medical literature that prevailed from the moment his works began to circulate. The focus here is on Galen in terms of the first distinction. Reference, though brief, to his influence seems useful in assessing the indirect diffusion of Galen's works. The diffusion, or better, the progressive imposition of Galen's way of thinking, 'Galenism',² was a process that can be considered to have been completed around the eighth century and it cannot be ignored when considering Galen's good standing in Byzantium. Within medical treatise writing, Byzantine authors were also inspired indirectly by Galen's works through consultation of compilations or corpora of medical content based on Galenic material. Although the encyclopaedic composition of Byzantine medical treatise writing is not a specialty of this field, as it is widely acknowledged to be a particular feature of Byzantine literature,³ Galen's role as its main source deserves special attention.

Galen's way of thinking and his works prevail in the *Medical Collections*, the *Synopsis for Eustathios*, and the *For Eunapios* of Oribasios (c. 325–after 395/6), physician of the Emperor Julian and Galen's fellow countryman. Oribasios calls Galen *thaumasios Galēnos* in the proem of the lost epitome of his writings produced at the behest of Julian, which survives in a codex of Photios'

1 Irigoin (1996: 207–8).

2 Temkin (1973); Nutton (2007: 171).

3 Odorico (1990), (2011); Piccione and Perkams (2003); Piccione and Perkams (2005).

Bibliotheca.⁴ The use of the Galenic material is not as central in the work of Aetios,⁵ originally from Amida, in Mesopotamia, as it is in Oribasios. In the sixteen-volume compendium *Tetrabiblos*,⁶ which enjoyed great popularity in Byzantium, Aetios made wide use of several other ancient medical authors.⁷ Alexander of Tralles,⁸ who lived and worked during Justinian's reign (527–65), was more independent than the previous authors. His twelve-book treatise *Therapeutics* is what remains of his production, some of which has been lost and some of which has been deemed inauthentic. Alexander acknowledges the importance of both Hippocrates and Galen's works, which he calls 'most divine',⁹ but is often independent as regards remedies proposed by the two doctors for treating ailments. As to Galen specifically, he confirms his authority in pathology and physiology, but often disagrees on therapeutics. Paul of Aegina, who practised in the early seventh century,¹⁰ studied at the School of Alexandria, but never relinquished the mental aptitude so dear to the medical authors of the Byzantine era, that is, summarising the work of predecessors deemed authoritative and turning them into brief and practical sets of diagnostic and therapeutic recommendations.¹¹ Paul explicitly defines his work as an 'abridged collection of the writings of ancient authors'.¹² In seven books, he articulates a task that by his own admission is substantially taken up in Oribasios' lost synopsis of Galen's works and the *Medical Collections*.

These authors, especially Aetios and Paul of Aegina, were widely read in Byzantium. Perhaps they were favoured because of their style and language, which were less difficult than Galen's prose. The evaluations by the patriarch Photios (810–93) in his *Bibliotheca* can be interpreted in this regard. The book reviews by the patriarch need to be considered with due attention and taken for what they are, which is a mirror of the learned thinking of a bibliophile of

4 De Lucia (2006: 20–37); Photios, *Bibliotheca*, Codex 216, ed. Henry (1962) 111.131–2. On Galen's reception in late antique medical handbooks, see Bouras-Vallianatos (Chapter 2) in this volume.

5 Romano (2006: 258–61). See also Maisano (1992: 351–3); and Ieraci Bio (2001: 115).

6 The work has not yet received a full and unified critical edition of all sixteen volumes. For the first six books, see the critical edition by Olivieri (1935–50).

7 Among them are, for example Archigenes, Rufus of Ephesus, Dioscorides, Herodotus (the physician), and Soranus.

8 Guardasole (2004) and (2006: 557–73). See also the recent study by Bouras-Vallianatos (2014).

9 See, for example, Alexander of Tralles, *Therapeutics*, 5.5, 5.6, ed. Puschmann (1879) 11.203.23, 11.211.22.

10 According to the Arab author Abū-l-Faraj; see Lamagna (2006: 689).

11 Van der Eijk (2010).

12 Paul of Aegina, *Epitome*, pr., ed. Heiberg (1921) 1.3.24–5.

the ninth century, who obviously, by virtue of his role, had privileged access to books.¹³ Although *Bibliotheca*'s influence in the diffusion and circulation of books and texts in Byzantium needs to be seen with a sense of proportion, this collection of book reviews is of the utmost importance and deserves the greatest attention. As regards texts with a medical content,¹⁴ it is interesting to note Photios' expressed approval of Oribasios, whom he advises anyone interested in medicine to read. He considers Aetios just as positively,¹⁵ likewise recommending him and dedicating ample space to him, even quoting the content of his books. Contrary to what one might expect, when it comes to Galen, Photios only mentions his *On Sects for Beginners*, which he judges positively, while generally speaking, his evaluation of Galen's work is anything but flattering: he considered Galen scarcely legible because of its obscure style and a bend for boring digressions that make the reading rather heavy.¹⁶

Besides the success of these works in Byzantium, testified by the number of manuscripts that speak of them – more than sixty-six complete or partial witnesses to Paul of Aegina's abridgement and seventy-five to Aetios of Amida¹⁷ – they are of most importance for the opportunity of finding and reviving in an indirect form Galen's works that did not survive, are preserved in a fragmentary manner, or have been transmitted in languages other than Greek (e.g. Syriac, Arabic, Latin).

It is worth mentioning, for example, that various parts of Oribasios' *Medical Collections* books 46 and 47 are drafted from Galen's major commentaries on Hippocratic treatises on surgery, namely *On Fractures*, *On Joints*, and *On Surgery*, preserved in the Greek textual transmission, and also in part from Galen's lost commentaries on the Hippocratic *On Wounds* and *On Head Wounds*,¹⁸ that survive partly in Arabic translation. Even when certain works are directly preserved, it is not uncommon for Byzantine compilations to preserve better readings that often are in agreement with the surviving Arabic translations. Staying with Oribasios' production, this is attested by a treatise on minor anatomy, *On the Anatomy of the Nerves* – handed down together with extracts of *On the Function of the Parts of the Body* and of *On Anatomical Procedures* in book 24 (chapters 57 and 58) of *Medical Collections*.¹⁹

13 On Photios in the framework of Galen's reception in non-medical Byzantine literature, see Stathakopoulos (Chapter 7) in the present volume.

14 Marganne (2010b).

15 Photios, *Bibliotheca*, Codex 221, ed. Henry (1962) III.151–2; Marganne (2010b: 510–13).

16 Photios, *Bibliotheca*, Codex 164, ed. Henry (1960) II.136.

17 Mondrain (2012: 621).

18 Roselli (1996a: 375–6), (1996b), (2006: 199–200).

19 Garofalo (2008: xix–xxii).

When dealing with the transmission of Galen's works, reference to the draft of Byzantine medical compilations calls for mention of the School of Alexandria, where Oribasios, Aetios, and Paul of Aegina were trained, and whose greatest development took place in the sixth and seventh century. The School's activities, essential to the study and spread of Greek medicine in the East and in the West, became known through the Hippocratic and Galenic canonical works. It took advantage of the contribution of Ammonios' Neoplatonic School, and through the use of exegetics it adopted and developed techniques and methods aiming at didactics, among them the notion of division (*dihairesis*), which had been used differently in ancient times, including by Galen himself.²⁰ Within the School of Alexandria, Hippocratic and Galenic works deemed useful for medical training were selected and organised in the sixth century to form a canon of twenty works to be read and commented on. It consisted of four treatises by Hippocratic authors and sixteen by Galen, including the *On Sects for Beginners* and the *Therapeutic Method*. The only traces left of this *ordo legendi* are found in later Arabic testimonies.²¹

This lack of evidence in Greek is only ameliorated somewhat by the Viennese manuscript med. gr. 16, dated to the thirteenth or fourteenth century and consisting of two miscellaneous volumes. In the second volume (at fols 329r–359v), there are diagrams in the form of division of eight of the sixteen works of Galen's, the four introductory (*On Sects for Beginners*, *Art of Medicine*, *Therapeutics to Glaucón*, *On the Pulse for Beginners*), and the four works dedicated to the symptomatology of diseases (*On the Different Kinds of Diseases*, *On the Causes of Diseases*, *On Distinctions in Symptoms*, *On the Causes of Symptoms*), contrary to the *inscriptio* of the codex, which refers to the sixteen canonical treatises included between the *On Sects for Beginners* and the *Therapeutics Method*.²² The codex does not seem to have anomalies that would lead one to think that there has been a loss of folios containing the other works of the canon in the form of divisions,²³ so it is necessary to consider that the unknown scribe of the codex (probably a doctor writing for himself) transcribed the work from a model fraught with gaps or omitted some of the material in full awareness. The fact that medical treatises (excerpts from Oribasios, Marcellinus, and Theophilus) were copied in the same manuscript before the

20 Ieraci Bio (2003: 11–13). *Dihairesis* was considered to be one of the primary functions of thought by Plato and later by Galen.

21 See Garofalo (Chapter 3) in this volume.

22 Gundert (1998).

23 This method was used in Byzantine times for didactic purposes and is handed down from some manuscripts; see Ieraci Bio (2003: 30–51).

diagrams is a subject for thought.²⁴ Independent of the deepest assessment of the production context of this manuscript, that the Alexandrian *ordo legendi* was unsuccessful in the Byzantine world is incontrovertible. Although Galen's treatises included in the canon were widespread, especially the introductory ones, the surviving manuscripts do not seem to hand them down in the sequence established by the canon. It thus seems that the *ordo legendi* had no normative influence on the order of medical studies in Byzantium, where the didactic organisation was structured according to different trends, possibly with greater preference for substitutive abstracts of the original works. Also of note, Galen's works adopted in the Alexandrian curriculum underwent structural modifications in the transmission of the texts. For example, the major anatomical Galen work, *On Anatomical Procedures*, which was never part of the curriculum, was in fact rather unsuccessful, as the work is testified only by one early manuscript in Parisinus gr. 1849, which however lacks about a third of the work.²⁵ The manuscript tradition of the minor anatomical works (*On Bones for Beginners*, *On the Dissection of Muscles*, *On the Anatomy of Nerves*, *On the Anatomy of Veins and Arteries*) is mainly reproduced in codices from southern Italy (Scorialensis. T.III.7 and Grottaferrata Cryptensis Z.γ.vi).²⁶ This is not at all surprising, as southern Italy was the natural destination for immigrants from Egypt, Palestine, and Syria in the aftermath of the Arab conquest of 642.²⁷ This perhaps explains the scarce number of Greek manuscripts with Galen's works attested before the twelfth century,²⁸ bearing also in mind that medicine was not part of the *quadrivium*, the higher education curriculum consisting of arithmetic, geometry, music, and astronomy.²⁹

Among Galen's most widespread works until the fifteenth century is the *Art of Medicine*. This treatise³⁰ has the richest direct tradition preserved in thirty-nine Greek manuscripts, almost all of them dated to the fifteenth and sixteenth

24 Degni (2012: 383). One more manuscript of Naples, Biblioteca Statale Oratoriana del Monumento Nazionale dei Gerolamini, gr. CF 2.11, which belonged to Giovanni Doceiano (fifteenth century), hands down the texts of the diagrams of Galen's *Art of Medicine* (chapters 6–18); see Ieraci Bio (2007).

25 Garofalo (1986: I.x–xxii).

26 Garofalo (1996: 155–62).

27 The Alexandrian *ordo legendi* and specific textual traditions unknown in Byzantium are attested in southern Italy and shown to have been mediated and transmitted to the late Middle Ages by the medical schools of Salerno and Ravenna. In the second half of the twelfth century, when Burgundio undertook the translation of the works of Galen, he arranged the works according to the Alexandrian *ordo*; see Fortuna and Urso (2009).

28 Wilson (1987: 50–1).

29 Mondrain (2012: 610–13).

30 Boudon (2000: 44).

century.³¹ Still, there are four manuscripts, Vaticanus gr. 1845, Parisinus suppl. gr. 634, Parisinus gr. 2265, and Vaticanus Pal. gr. 199, dated to the first half of the thirteenth century, and two more, Parisinus gr. 2270 and Parisinus gr. 1883, dated to the fourteenth century.³² Three out of these six manuscripts (Vaticanus Pal. gr. 199, Parisinus gr. 1883, Parisinus suppl. gr. 634) are strongly suspected of having been copied in southern Italy, while for the remaining three, although they were proposed to have been copied in southern Italy too,³³ this assumption now seems uncertain; in particular, the handwriting of Vaticanus gr. 1845 does not bear any similarities with that of Italo-Greek origin.

As regards this and other works by Galen, however, the Greek text does not always preserve the most original readings. In this case, the Arabic translation, attributed to Ḥunayn ibn Ishāq (d. 873), hands down a state of the text preceding the most ancient preserved Greek manuscript, like the two most ancient Latin translations, which at least in one case depend on the Arabic translation.³⁴ For other treatises composed of more books, the situation is more fluid. For instance, the first book of the *On the Functions of the Parts of the Body* appears in fourteen manuscripts, but only nine manuscripts hand down all seventeen books that comprise the work.³⁵ The considerable quantity of Galen's treatises has made their collection and preservation in a single book impossible, which is also the case with the Hippocratic corpus. The problems in the transmission of Galenic texts are certainly due to this situation as well as to the arrangement of the treatises, or parts of them, being created on the basis of necessity (for school, professional, learned interests), rendering them revised and unstable as regards the transmission of the texts themselves.

In examining the transmission of Galen's works, it should be pointed out that the manuscripts preserving his treatises are no different from those containing other Byzantine medical authors. The only difference, as already noted, is that we lack manuscripts transmitting Galen's entire corpus. Moreover, the material aspect of Byzantine medical codices is no different from that of others with different content. However, we can point to the fact that, starting from the twelfth century, the majority of medical codices are on paper as opposed to parchment, although this choice is also increasingly common to codices

31 I have taken the numerical data from the editions of the Galenic treatises and from Diels (1905–6), at http://cmg.bbaw.de/epubl/online/diels_02.html (accessed 6 March 2018). The recent census edited by Touwaide (2016) is a revision of Diels' repertory with updated bibliographic indications; however, the absence of indices makes it hard to consult.

32 Boudon (2000: 196–200); Irigoin (1991: 86).

33 Irigoin (1991: 88–9).

34 Boudon (1996: 44).

35 Mondrain (2012: 610).

with other kinds of texts. As regards the arrangement of the treatises we have homogeneous miscellaneous codices where Galen's treatises are transmitted together with the medical works of other authors, or collections that include selections of his works. Medical works, including Galen's, are rarely in heterogeneous miscellaneous codes that include texts of other typologies. An example of the latter is the above mentioned Vindobonensis med. gr. 16, which is mainly made up of medical texts together with Hesiod's *Works and Days*, and parts of Libanios' (c. 314–c. 393) letters, although these were copied at different dates between the end of the thirteenth and mid fourteenth century. Judging by the codicological and palaeographical characteristics of the codex, each part was assembled when the two latter works were copied (mid fourteenth century). It is impossible to go back and look at the character of the reader/possessor of the codex in order to identify the objectives that determined the nature of the collection, but this is quite a frequent problem when considering the production of Byzantine manuscripts. In the specific case of manuscripts containing medical works, and thus of Galen's manuscripts in particular, determining the aim of these collections is no simple matter.

Due to the above-mentioned problems, it is difficult to establish a probable case history of the typologies of books that contain Galen's works in regard to Byzantine medical production, but one can possibly identify criteria corresponding to a function or to a specific destination. A miscellaneous codex of the Laurentianus Plut. 74.7 (see Figure 6.1),³⁶ preserving a collection of texts on surgery and assembled by an unknown well-off person named Niketas should be interpreted in this context. The codex is among the *codices vetustissimi* (those manuscripts written in the ninth century and in the first half of the tenth), an exceptional witness to the material and textual value of the works it preserves. Rich in accurate didactic images of the treatises that form it, and produced in handwriting that suggests the early or mid-tenth century,³⁷ this codex gathers in 406 folios a collection of classical writings on surgery, whose authors may be placed between the fifth/fourth centuries BC and the seventh century AD, from Hippocrates to Paul of Aegina. The manuscript represents the sole witness to some treatises or at least one of the most ancient.³⁸ As regards Galen, the codex hands down two chapters of book 6 of the *Therapeutics*

36 The codex was recently studied in an edited volume by Bernabò (2010).

37 The manuscript was produced at the behest of the Emperor Constantine VII Porphyrogenetos (r. 913–59) or by a high official of the court, and for this reason, it can be dated to the first half of the tenth century; see Degni (2008b: 108). Speranzi (2010: 28) dates the manuscript to the first third of the tenth century.

38 For example, Soranus' *On Signs of Fractures* and *On Bandages* have not been otherwise transmitted; see Marganne (2010a: 47).

Method dealing with the Hippocratic treatise *On Fractures* (fols 82r–90v),³⁹ *On Bones for Beginners* (fols 263r–276r)⁴⁰ – of which it represents the oldest witness – and the four books of *Commentary on Hippocrates' 'On Joints'*,⁴¹ which closes the anthology (fols 314r–407r). According to the *monokondylion* at the end of the codex (fol. 407v), the medical collection belonged to a Byzantine hospital (*xenon*) in the fourteenth century or perhaps even earlier, although it is not possible to identify this particular Byzantine institution, since the indication of ownership is lacunose.⁴²

A group of codices dated to the fourteenth century in the Bandini catalogue of the Biblioteca Medicea Laurenziana in Florence,⁴³ copied by the scribe Ioannikios, was a few years ago re-dated to the twelfth century,⁴⁴ thus allowing us to increase the list of Galen's early manuscripts, which is rather scarce until the thirteenth century. Among the group of twenty-one codices of varied content copied by Ioannikios and by his collaborators, one can distinguish nine manuscripts of medical content (Laurentianus Plut. 74.05, 74.18, 74.22, 74.25, 74.30, 75.5, 75.7, 75.17, and Parisinus gr. 1849, see Figure 6.2),⁴⁵ six of which contain only works by Galen, while in the others, his works are combined with the treatises of Byzantine doctors. The codices, many of which were used by Burgundio of Pisa (c. 1110–93) for the Latin translation of Galen's works, were considered of Italo-Greek production,⁴⁶ while they probably must be attributed to a Constantinopolitan *scriptorium*, at least as far as the material and palaeographical characteristics of the group suggest.⁴⁷

In this chapter, it is impossible to tackle the specific aspects of the textual tradition of Galen's works handed down by the Ioannikios codices, which moreover, at least as regards the copies used by Burgundio, allowed him to complete translations from Greek into Latin of Galenic works that until then had been available only in Arabic.⁴⁸ If, as it seems, Ioannikios' codices should

39 Galen, *MM*, 6.5–6, ed. Kühn (1825) x.423–55.

40 The text was edited by Garofalo (2005).

41 Galen, *Hipp. Fract.*, ed. Kühn, (1829) xviiiA.300–767.

42 Degni (2008b: 94); Speranzi (2010: 13 n.6). Angelo Cocchi (1754: 41–2) proposed the identification with the *xenon* of Forty Martyrs in Constantinople in accordance with the Greek article *tōn* before the lacuna of the *monokondylion*. This hospital was built by the Emperor Isaac II Angelos (r. 1185–95); see Janin (1953: 499–500).

43 Bandini (1764–70).

44 Wilson (1983) and (1991).

45 The description and content of the manuscripts is found in Degni (2008a; 2010).

46 Cavallo (1980: 214–15); Irigoin (1982: 135–6).

47 Degni (2008a: 228–40).

48 Burgundio, for example, translated books 7–15 of the *Therapeutic Method* that had been until then available in a translation from Arabic by Gerard of Cremona;

not be attributed to southern Italy, the contribution of this Byzantine province to the transmission of medicine and of Galen remains quite vital, though many witnesses were lost in the late Middle Ages after translation interventions. In the first half of the fourteenth century, Niccolò of Reggio from the Greek family of Deoprepio, personal physician to King Robert I of Anjou (r. 1309–43), translated a large number of Galenic treatises, for some of which the Greek text has not survived, such as *Outline of Empiricism*.⁴⁹

Some further important witnesses of Galen's works are of Italo-Greek origin, such as Laurentianus Plut. 74.3, which contains no fewer than twenty-one treatises, Scorialensis T.III.7, Messanenensis. gr. III, the Vatican Archive of the Chapter of St Peter's H.45, Marcianus gr. 288, and Parisinus gr. 1845.⁵⁰ The increase in codices in the twelfth century must certainly be related to the phenomenon of the Latin translation of scientific and philosophical texts that experienced a sudden flourishing at that time, no doubt bound to the development of the intellectual activity in the West and to the closer relations of the West with the Byzantine Empire. In the following period, during the thirteenth and fourteenth centuries, a different approach to ancient texts was adopted. This must be viewed in close relation to the philological recovery of classical works inaugurated during the rule of the Palaiologan dynasty, especially between the reign of Michael VIII (r. 1259–82) and that of Andronikos III (r. 1328–41). The paper codices written in cursive, a proper documentary practice, feature thickly written notes and comments in the margins, the outcome of learned reading, which was not much seen in the previous period. However, in comparison to other codices of this period, Galen's manuscripts, as well as those of other medical authors, do not display any commentary around the text and marginal notes are scarcely attested. The reason for this difference is perhaps related to the practical nature of the art of medicine and to the fact that this discipline was not part of the *quadrivium*.⁵¹

Although knowledge of Galen's manuscripts is well established,⁵² the position these late witnesses occupy in the handwritten tradition of the Galenic works has not yet been totally determined. This applies in particular to the later manuscripts, for which in-depth interventions and a contextualisation of the copying and reading processes they have gone through would be desirable.

Irigoin (1996: 207–8). See also *Galenolatio*, at <http://www.galenolatio.com/index.php?id=11&L=&uid=49> (accessed 13 December 2017). On Burgundio of Pisa as a translator of Galen's works, see Urso (Chapter 19) in this volume.

49 Irigoin (1996: 207–8).

50 Lucà (2012: 577–90).

51 Mondrain (2012: 609–15).

52 Touwaide (2016).

Amid the substantial quantity of witnesses, there is still space for new discoveries, especially in regard to works related to Galen's lesser known and diffused works, to allow for better readings of texts transmitted by the handwritten tradition in a sporadic and incomplete form. Such is the case of an extraordinary find a few years ago in the codex no. 14 of the Vlatadon Monastery of Thessaloniki of entire Galenic texts that were thought to have been lost.

This codex, a paper example from the fifteenth century, allowed the filling of significant gaps in *On the Order of My Own Books* and the *On My Own Books* that were transmitted only in a fragmentary version in Milan Ambrosianus gr. 659 (Q 3 Sup.). It also contains *On My Own Opinions*, a doctrinal treatise by Galen previously transmitted complete only in a Latin translation, and *Avoiding Distress*, previously believed to have been lost.⁵³ This work occupied the fourth position in the list of the twenty-six treatises on ethics listed by Galen in the *On My Own Books*.⁵⁴ This finding attests to the extraordinariness of this discovery. At fol. 147v, a diagram schematically summarises the degrees of preservation of the body and refers to the first part of the *Art of Medicine*, which is also contained in the manuscript.⁵⁵ This diagram is also found, although in a slightly varied form, in other Galenic manuscripts: Vaticanus gr. 285, Parisinus gr. 2271, and Marcianus gr. v.9,⁵⁶ and Mosquensis 466 (283).⁵⁷ These codices are related to the teaching, reading, and copying activities carried out in the circle of students of John Argyropoulos at the *xenon* of the Kral, the hospital annexed to the monastery of Saint John the Baptist in the Petra district of Constantinople. John Argyropoulos trained in Padua and then returned to Constantinople, taught medicine and philosophy in the decade prior to the fall of Constantinople in 1453. Testaments to his courses are found in several lists of auditors' names found in Marcianus gr. v.9 (fol. 17r), Mosquensis 466 (fol. 175v) and in the Oxford Baroccianus gr. 87 (fol. 33v), where the names of the students feature above a miniature of John Argyropoulos himself.⁵⁸ Among Argyropoulos' auditors, one finds Andronikos Eparchos, progenitor of a family of doctors from Corfu, and Demetrios Angelos, who continued with his

53 The text has been edited by Boudon-Millot, Jouanna, and Pietrobelli (2010) and Kotzia and Sotiroidis (2010). Both works, *Avoiding Distress* and *On My Own Opinions* were also published by Lami and Garofalo (2012). See also the study by Alexandru (2014) on the version of Galen's *On Prognosis* in the Vlatadon codex.

54 Galen, *Lib. Prop.*, 13, ed. Kühn (1830) XIX.45.13 = 15, ed. Boudon-Millot (2007) 169.17.

55 Pietrobelli (2010).

56 Mondrain (2000).

57 Pietrobelli (2010: 101 and n.47). The diagram seems to be linked to the practice of study and teaching in the Latin West, which is unsurprising considering the university education of the Argyropoulos in Padua; see Ieraci Bio (2010: 286–7).

58 Mondrain (2000).



FIGURE 6.1 Laurentianus Plut. 74-7, fols 9v–10r

interest in medicine after the courses, putting together a conspicuous library, largely medical, with Galen's treatises representing the majority (fifteen manuscripts out of twenty-eight in total).⁵⁹

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⁵⁹ See the list of manuscripts in Mondrain (2010: 300–2).

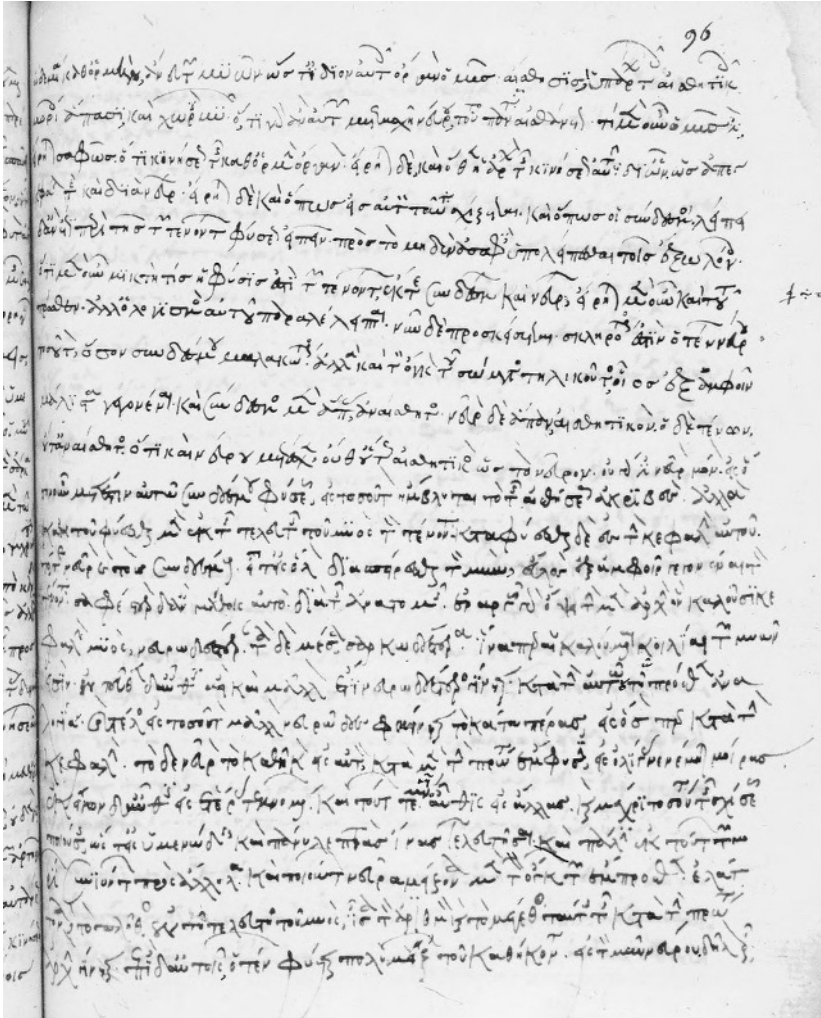


FIGURE 6.2 Parisinus gr. 1849, fol. 96r

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Galen in Non-medical Byzantine Texts, 600–1453

Dionysios Stathakopoulos

It seems easier to discuss Byzantine texts in which Galen does *not* appear, rather than the opposite.¹ This is because there is hardly a genre in Byzantium in which he is not mentioned, alluded to, fawned upon, or (much less often) criticised; in short, Galen is ubiquitous in Byzantine literature, and not just in medical texts. Vivian Nutton published a masterful overview on this topic some years ago which he began with the following statement: ‘Galen in Byzantium is one of those titles that becomes ever more problematic the more one studies it’.² Nutton went on to survey the reception of Galen in four ways: by looking at the domination of Galenism, by collecting information on what the Byzantines knew of the historical Galen, by following the textual tradition of Galenic texts, and by examining individual physicians’ and medical authors’ reception of the man and his work. This short study is filled to the brim with valuable information and is indispensable for the topic. I have decided to adopt a different approach in this chapter.

Roughly speaking there are two ways in which one can look for the reception of Galen in Byzantine texts. The first revolves around looking for general and often vague mentions of him in texts. Such mentions take the form of ‘Galen the physician’, or ‘Galen the excellent physician’, at times together with Hippocrates.³ They are by far the most common occurrence, and suggest that Galen had attained the status of an undisputed authority. These numerous cases show Galen as a ‘celebrity’, metonymous with, depending on the context,

1 It hardly needs emphasising from the outset that this is not an exhaustive study. I have relied heavily on the extensive corpus of texts included in the *Thesaurus Linguae Graecae* database (at stephanus.tlg.uci.edu/, accessed 1 December 2017) to search for mentions of Galen in Byzantine texts. I have excluded mentions to Galenic texts that are now accepted as spurious. A fuller investigation of the reception of Galen in Byzantium is a desideratum, but as I hope this chapter will make clear, it is a gigantic enterprise, worthy of the vast oeuvre of the man himself. All translations are my own, unless otherwise stated.

2 Nutton (2007: 171).

3 See, for a few examples: George Synkellos, *Extract of Chronography*, ed. Mosshammer (1984) 431.23; Michael Glykas, *Chronicle (Annales)*, ed. Bekker (1836) 251.21; Constantine Akropolites, *Epistles*, 195, ed. Romano (1991) 261.97–8; Michael Glykas, *On Problems of Holy Scripture*, 40, ed. Eustratiades (1906) 492.16; Nikephoros Gregoras, *Questions and Answers*, 4.15–16 ed. Leone (1970) 505.

a learned physician, ancient philosopher, or sage. Some of the Byzantine authors making such use of Galen may well in fact have been familiar with his writings, but the texts themselves do not include any information that would help us identify which texts they may have had access to. In my mind, however, such usage does not presuppose any direct engagement with Galen's texts; rather it shows that Galen's fame was so widespread that people would know of him and use him without needing to go into any details.

In this chapter, however, I would like to focus on an aspect of Galen's reception that has not yet received sufficient scholarly attention. I am going to examine his reception in more depth by trying to determine which of his works were actually read (and thus specifically cited or alluded to), when, where, and by whom. There are roughly two ways of examining this matter. In the first instance we have Byzantine authors who refer to Galenic works by name and often cite from them, or offer a paraphrase of their own. This is quite straightforward, but it is also much less common. Another way to trace his reception would be by identifying passages that modern editors consider as alluding to a Galenic passage. In many cases, however, this is a very subjective and often slippery way of discussing this matter. In a number of instances, the supposed borrowings or allusions are quite vague and general; they may suggest that a Byzantine author was recalling a passage from memory, or that he may have read it in an anthology or collection of opinions, or, in any case, only have a second-hand and imprecise notion of a given passage. In what follows, I have checked all instances of modern editorial suggestions of allusions to Galenic passages, but I have only included in the discussion those in which the correspondence (lexical and/or semantic) with the Galenic source was clear. Obviously, were one to devote a more exhaustive study on the reception of Galen in Byzantium such cases would need to be re-examined and more definitive pronouncements made case by case.⁴ By combining these two ways of reception I propose to present a (selective) genealogy of reading Galen in Byzantium. I will do this in a chronological order, taking into account the phases of Byzantine engagement with ancient texts and literary production. A final caveat needs to be stated from the outset. As a study of intertextuality spanning almost a thousand years and touching on a substantial number of authors and texts, each of which has received ample scholarly attention, this overview will, as a rule, only point to the most recent well-informed studies on the Byzantine authors and their debt to Galen. The interested reader will have to follow the path back to these studies to obtain the full picture of the hundreds of studies that have led to our current understanding, even if this is

4 See below, for example, the case of patriarch Germanos of Constantinople.

bound to shift in the years to come as more Byzantine texts are critically edited and their sources examined in more depth.

At the very beginning of the seventh century, patriarch Sophronios of Jerusalem (634–8) wrote an account of the miracles of Saints Cyrus and John. Galen is mentioned in a number of miracles (always together with Hippocrates), if only to stress that his teachings – his art – was useless when compared to the healing powers of the saints.⁵ Sophronios was familiar with medical terminology,⁶ some of which may have been derived from Galenic works, but he is clearly not interested in acknowledging or demonstrating his possible knowledge of the ancient medical authors, not least because, as he suggests, the physicians of his day were ignorant and did not know what to do when faced with serious illnesses, nor could they find the answers in the writings of ancient physicians.⁷ In a similar vein, the contemporary miracle collection of St. Artemios mentions ‘the fine-sounding Hippocrates and Galen and the countless other quacks’.⁸ Such attitudes may be characteristic of the genre of hagiography at the close of late antiquity,⁹ but they are in no way typical of the Byzantine reception of Galen.

In the period of transition (650–850), there is very little evidence of an active engagement with Galen’s writings. Patriarch Germanos of Constantinople (715–30) may be the only author in the period to preserve an allusion to Galen. In his *On Terms of Life* he discusses the paradox that people who are sick and receive the best care may still die, while poor men and beggars who could not afford any medical attention survived. The editor of the text, Leendert Westerink, suggests that the phrase ‘One might not unreasonably concede that medical skill can preserve health and bodily vigour when it is present or recall it when has gone [sic]’¹⁰ alludes to this Galenic one at the beginning of *On Sects for Beginners*: ‘Doctors have to know by which means to bring about health, when it is absent, and by which means to preserve it, when it is present’.¹¹ Apart from the word ‘health’ the two passages may convey a similar meaning, but they do so in very different ways, which makes me doubt that Germanos was citing or paraphrasing Galen in this passage. It is also worth noting that there is hardly a

5 Sophronios, *Miracles of St. Cyrus and John*, 13, 15, 19, 22, 30, 43, ed. Fernández Marcos (1975) 270, 274, 279, 284, 302–6, 347.

6 Fernández Marcos (1975: 107–19); Efthymiadis (2014: 111).

7 Sophronios, *Miracles of St. Cyrus and John*, 44, ed. Fernández Marcos (1975) 347–9.

8 *Miracles of St. Artemios*, 24, ed. Papadopoulos-Kerameus (1909) 34; tr. Crisafulli (1997: 143).

9 Kazhdan (1984: 45); Magoulas (1964).

10 Germanos, *On Terms of Life*, ed. and tr. Garton and Westerink (1979) 10–13.

11 Galen, *SI*, 1, ed. Kühn (1821) 1.64.2–4 = ed. Helmreich (1893) 1.2–4; tr. Walzer and Frede (1985: 3).

trace of Galenic texts in surviving manuscripts dated to this early period, with the exception of a fragment from Galen in Munich dated to the seventh/eighth century, perhaps from the *Therapeutic Method*.¹²

With patriarch Photios (810–93) we reach the first author in which an actual and active engagement with Galen can be observed. In his *Bibliotheca*, in which he reviewed a large number of ancient and early Byzantine works, he devotes one entry to Galen (no. 164) in which he presents a brief, but quite accurate, summary of *On Sects for Beginners*.¹³ Photios clearly read the short work, which he summarised quite closely. The entry suggests a certain familiarity with the works of Galen more generally: 'In diction and syntax it is obviously pure and clear; Galen always gave thought to such matters. However, in many of his writings he burdens his text with irrelevancies, digressions and lengthy periods, which confuse and obscure the meaning of the text'.¹⁴ It is then perhaps remarkable that no other Galenic text is discussed in the *Bibliotheca*. When it comes to medical treatises, Photios devotes considerable space to Dioscorides (Cod. 178), Oribasios (Codd. 216–19), Theon of Alexandria (Cod. 220), and Aetios of Amida (Cod. 221). Some of these entries are much more lengthy and detailed than the short one on Galen. There are, however, passing references to him within these entries that corroborate Photios' familiarity with Galen. In the entry on Dioscorides, for example, Photios compares the author to Galen and finds the latter lacking.¹⁵ Furthermore, he is aware that Oribasios was no mere epitomiser of Galen, but added useful material lacking in the original,¹⁶ and concludes that Aetios is clearer than Oribasios in the way he has digested Galen's work and should be preferred.¹⁷ Finally, in his entry on Helladios (Cod. 279), Photios mentions a passage from Galen on the fact that amber attracts podded broad beans, but this was included in his source and therefore does not mean that he had first-hand knowledge of the text.¹⁸

It takes a century to find the next Byzantine author who engaged directly with Galen, the grammarian and orator John Sikeliotes (fl. late tenth–early eleventh

12 See at Pinakes <http://pinakes.irht.cnrs.fr/notices/cote/45060/> (accessed 2 December 2017).

13 Photios, *Bibliotheca*, Codex 164, ed. Henry (1960) II.135–6; the editor (1960: 135, n.1) suggests that Photios read a text in which the material is divided differently than in the version that survives today. On medical works in Photios' *Bibliotheca*, see Marganne (2010).

14 Tr. Wilson (1995: 148).

15 Photios, *Bibliotheca*, Codex 178, ed. Henry (1960) II.182–4.

16 Photios, *Bibliotheca*, Codex 217, ed. Henry (1962) III.132–4.

17 Photios, *Bibliotheca*, Codex 221, ed. Henry (1962) III.140–52. On Oribasios and Aetios, see Bouras-Vallianatos (Chapter 2) in this volume.

18 Photios, *Bibliotheca*, Codex 279, ed. Henry (1977) VIII.171.1–2; the passage in Galen comes from *Nat. Fac.*, 1.14, ed. Kühn (1821) II.45.5–8 = ed. Helmreich (1893) 133.21–5.

century).¹⁹ John refers to Galen in a number of passages of his *Commentary to Hermogenes' 'On Forms'*, but not all of them seem to correspond to extant Galenic texts: the clearest case is a reference to the soul being a slave to the mixtures of the body, which derives from *The Capacities of the Soul Depend on the Mixtures of the Body*.²⁰ Further references include one on 'what Galen calls the usefulness of parts', which may in fact allude to the text by the same name (*On the Function of the Parts of the Body*),²¹ as well as another reference to 'what Galen calls the constituent mixtures (*systatikai kraseis*)', a phrase which, however, is not attested in the published Galenic corpus.²² John also offers a critical comment on Galen's prose by suggesting that his style is often confusing, as he often uses amplification, but does not follow it up.²³ The encyclopaedic dictionary known as *Suda* (c. 1000) offers a glimpse into the growing interest in Galen at the time. An entry is dedicated to the author comprising of a brief biography followed by the following statement: 'He composed many works on medicine and philosophy, and also on grammar and rhetoric; because they are familiar to everyone, I have not thought it necessary to catalogue them here'.²⁴

Michael Psellos (1018–around 1078) is in a class of his own. The Byzantine polymath and prolific author (in that, in a way, he is a match for Galen himself) is, after Nemesios,²⁵ the author who displays the most clear reception of Galen in his writings. We are fortunate in having a detailed study by Robert Volk on the medical contents of Psellos' texts, which makes the exploration of Galenic material much easier.²⁶ Psellos devoted a number of texts on medical matters, the most prominent of which is his didactic poem *On Medicine*.²⁷ All the more remarkable then that Galen is conspicuous through his absence therein, as Psellos' chief source was Paul of Aegina and to a lesser extent Theophilus (on urines) and perhaps Palladios (on fevers).²⁸ This is remarkable insofar as I will discuss below, Psellos was well acquainted with the Galenic corpus and therefore we must assume that basing his medical poem on Paul was a conscious

19 On this author see Wilson (1996: 150), and more recently Papaioannou (2015: 279).

20 John Sikeliotēs, *Commentary to Hermogenes' 'On Forms'*, ed. Walz (1834) 118.23–5; Galen, *QAM*, 3 or 4, ed. Kühn (1822) IV.779 or IV.782 = ed. Bazou (2011) 21–2 or 24.

21 John Sikeliotēs, *Commentary to Hermogenes' 'On Forms'*, ed. Walz (1834) 117.11–12.

22 It is attested in the *Corpus Hermeticum*, 26.25.12, ed. Festugière and Nock (1954) 87.18.

23 John Sikeliotēs, *Commentary to Hermogenes' 'On Forms'*, ed. Walz (1834) 197.10.

24 *Suda* Γ, 32, ed. Adler (1927) 1.506. Translation by Heath at <http://www.stoa.org/sol-entries/gamma/32> (accessed 2 December 2017).

25 See Bouras-Vallianatos (Chapter 4) in this volume.

26 Volk (1990).

27 Michael Psellos, *On Medicine*, ed. Westerink (1992) 190–233. See also the recent study on a new witness of the poem by Bouras-Vallianatos (2015).

28 Hohlweg (1988: 45).

choice, no doubt borne out of convenience, since Paul himself had epitomised and excerpted ample material from Galen.²⁹

References to Galen can be found in various texts and genres in the Psellian oeuvre. In some cases he refers to the man himself (though rarely to an actual work). In a short treatise on miscellaneous questions there is a reference to Galen on the qualities of the humours that is a loose paraphrase of a passage in *Against Lycus*.³⁰ In another treatise on how some men become sensible and others stupid he refers to the ideas on large heads of the 'Pergamene Asclepiad' (i.e. Galen) as he discussed them in his *On Hippocrates' Epidemics VI*.³¹ There is a further allusion to the same Galenic text in a short treatise on the female demon Gyllo as part of a discussion on diseased infants, which contrary to folk beliefs may be suffering from epilepsy rather than having been attacked by her.³² Psellos must have certainly read Galen's *On the Function of the Parts of the Body* as there are various loose allusions to its contents in his *Solutions of Natural Questions* and specifically on the question of the difference between male and female reproductive organs, their development, structure, and function.³³ Furthermore, he mentions having consulted the work in a short treatise (*On Philosophy*).³⁴ Finally there is a general allusion to the same work as Psellos contrasts Aristotle and Galen on the qualities of the brain in a short treatise as well as a more general reference (again coupled with Psellos' Aristotelian critique) in his *Funerary Speech on Xiphilinos*: 'But as far as the nature of man is concerned, I must admit that the doctor from Pergamum [Galen] dealt with that subject in his treatise on the utility of the members of the body more accurately than Aristotle'.³⁵ Psellos' use of Galen represents

29 On Paul of Aegina compiling methods in using Galenic quotations, see van der Eijk (2010: 536–53).

30 Michael Psellos, *Miscellaneous Questions*, ed. O'Meara (1989: 58); Galen, *Adv. Lyc.*, 4, ed. Kühn (1829) XVIII.A.221–2 = ed. Wenkebach (1951) 16–17.

31 Michael Psellos, *On How Some People are Born Intelligent and Others Moronic*, ed. O'Meara (1989) 93; Galen, *Hipp. Epid. VI*, 3, ed. Kühn (1828) XVIII.A.818–19 = ed. Wenkenbach (1956) 16–17. It is noteworthy that in the same passage Psellos suggests that Galen discussed this issue in his *Art of Medicine*, but this seems a mistake.

32 The Galenic reference is to epilepsy in infants: Michael Psellos, *On Gyllo*, ed. O'Meara (1989) 164; Galen, *Hipp. Epid. VI*, 7, ed. Kühn (1829) XV.III.B.341 = 8, ed. Wenkebach (1956) 348. There is a further reference to a Galenic passage on epilepsy in infants that points loosely to *Loc. Aff.* 3.9, ed. Kühn (1824) VIII.173–4.

33 Michael Psellos, *Solutions of Natural Questions*, ed. Duffy (1992) 50–1; Galen, *UP*, 14.7, ed. Kühn (1822) IV.164–75 = ed. Helmreich (1907) I.302–10.

34 Michael Psellos, *On Philosophy*, ed. Duffy (1992) 2.

35 Michael Psellos, *Solutions to Various Questions (Epilyseis Diaphorōn Erotēmaton)*, ed. Boissonade (1838) 66.8–17; Galen, *UP*, 8.3, ed. Kühn (1822) III.620–5 = ed. Helmreich (1907) I.449–53. The passage in the *Funerary Speech on Xiphilinos* is in ed. Polemis (2014)

an impressive feat compared to the previous period. It suggests the beginning of a more serious engagement with his texts, which must have been based on the existence of manuscripts. Indeed, it is the case that the more regular copying of Galenic works that are extant begins in the tenth century and picks up pace in the eleventh century.³⁶ It is perhaps interesting to note that the earliest surviving manuscript of *On the Function of the Parts of the Body* (Urb. gr. 69), a work used by Psellos, was copied in the eleventh century.³⁷

Psellos' pupil, John Italos (c. 1025–after 1082) was familiar with Galen's *Introduction to Logic* to which he refers on the number of syllogisms (three according to Aristotle and four according to Galen).³⁸ Another of Psellos' students, the learned archbishop of Ohrid Theophylaktos (1055–after 1107) shows in his writing the state of familiarity with Galen displayed by intellectual elites of his era. In a letter to the court physician, Nicholas Kallikles, dated to around 1105, Theophylaktos asked to borrow Galenic treatises, mentioning especially *On the Doctrines of Hippocrates and Plato*.³⁹ It is tempting to see a laudatory poem to Galen (*On a Book by Galen Containing Various Treatises*) as a response to receiving such manuscripts; although Theophylaktos makes no mention to a specific work his use of the term *asystasia* (confusion) is a *hapax* in Galen and derives from his *On the Different Kinds of the Pulse*.⁴⁰ Finally, in a speech entitled *To his Undisciplined Pupils*, he discusses disease and how it is countered: by physicians, by drugs, by checking the pulse, and 'by having Galen on one's lips'.⁴¹

It seems that by the early twelfth century, active engagement with Galen was strong, making him an indispensable author among the intellectual elite. This is very clearly reflected in the anonymous satire *Timarion*, in which the 'divine Galen' is seen as the greatest medical authority in the underworld, even though he is not there to judge the case of the protagonist (falsely dragged to Hades although still alive), because he is away revising his *On the Different*

160, translation by Kaldellis and Polemis (2015: 221); see also Volk (1990: 297, 379). On Galen in Psellos' letters, see, for example, Ieraci Bio (1996).

36 Wilson (1987: 52–3).

37 Wilson (1987: 53); see at Pinakes <http://pinakes.irht.cnrs.fr/notices/cote/66536/> (accessed 2 December 2017).

38 John Italos, *Questions and Answers*, 55, ed. Joannou (1956) 76; Galen, = Galen, *Inst. Log.*, 9.4, 11.6, ed. Kalbfleisch (1896) 23.3–4, 25.17–26.3. The reference to four types of syllogism could also derive from *PHP*, 2.3, ed. Kühn (1823) v.224.3–9 = ed. De Lacy (1978) 1.114.1–5.

39 Theophylaktos of Ohrid, *Epistle* 112, ed. Gautier (1986) 351; see also 350 nn.2–3.

40 Theophylaktos of Ohrid, *Poem* 3, ed. Gautier (1980) 351. The term *asystasia* is in Galen, *Diff. Puls.*, 2.10, ed. Kühn (1824) viii.626.6.

41 Theophylaktos of Ohrid, *To his Undisciplined Pupils*, ed. Gautier (1980) 135. Gautier translates the passage as 'having a quote from Galen on the lips', 134.

Kinds of Fevers.⁴² The author of the text is clearly well informed in medical literature, which naturally means in Galenic theories, but the text itself does not cite or paraphrase specific passages from the corpus.⁴³

The genealogy of scholars continues with two important commentators of Aristotle from the twelfth century, Eustratios of Nicaea (c. 1050/1060–c. 1120) and Michael of Ephesos (fl. first half of the twelfth century).⁴⁴ Eustratios was a pupil of Italos; it is assumed that together with Michael they produced their commentaries of Aristotelian texts commissioned by, or in any case belonging to, the circle of Anna Komnene (1083–1148/55), the historian and daughter of Emperor Alexios I (r. 1081–1118).⁴⁵ Eustratios refers rather generally to *Art of Medicine* to support his discussion of the medical art in his commentary to Aristotle's *Nicomachean Ethics*.⁴⁶ Michael, who was a prolific commentator, cites or makes allusion to Galenic works in a number of his texts. In his commentary on Aristotle's *Parva Naturalia* he engages with Galen in four passages: the statement that the blood in the liver is undigested and not proper 'even if the physician Galen dislikes this';⁴⁷ a discussion of what happens when the imagination is diseased, but the mind is healthy suggesting that Galen had written many and sensible things about this, following Aristotle;⁴⁸ a discussion

42 *Timarion*, 29, ed. Romano (1974) 75.

43 I have checked the editor's suggestions of allusions to Galenic texts and found that the correspondence between them and the *Timarion* is too vague to corroborate actual readings or borrowings; see Romano (1974: 193, for the index *locorum*). On *Timarion*'s medical contents see Konstantinou (1983: 159–81); and Leven (1993: 129–35).

44 On the two authors see Ierodiakonou and Bydén (2014).

45 See the funerary oration on Anna by George Tornikes, which discusses her interest in Aristotle and the work of Michael: ed. Darrouzès (1970) 283–9. For the reconstruction of Anna's patronage of the commentaries between, roughly, 1118 and 1138 see Browning (1962: 1–12).

46 Eustratios of Nicaea, *Commentary on Aristotle's 'Nicomachean Ethics'*, ed. Heylbut (1892) 73.18.

47 Michael of Ephesos, *Commentary on Aristotle's 'Parva Naturalia'*, ed. Wendland (1913) 52; Galen, *PHP*, 6.8, ed. Kühn (1823) v.572 = ed. De Lacy (1978) 1.414 or *UP*, 4.19, ed. Kühn (1822) 111.336 = ed. Helmreich (1907) 1.247.

48 Michael of Ephesos, *Commentary on Aristotle's 'Parva Naturalia'*, ed. Wendland (1913) 67. The editor of the text suggests with some reservations that this could be a reference to Galen's *On Demonstration*. In this work of logic and epistemology Galen seemed to have treated various topics, often in debate with Aristotle, see now Chiaradonna (2009). The work is now largely lost. Even Ḥunayn ibn Ishāq (d. 873) in his *Epistle*, 126, ed. Lamoreaux (2016) 116–18, reports that he was only able to find various fragments of the work when he was searching for it in order to translate it. It is therefore impossible that Michael had a manuscript at his disposal. What seems likely – if we accept Wendland's hypothesis – is that Michael knew of the work from passages in Galen's other writings (especially *On the*

on marasmus with reference to Galen's *On the Different Kinds of Fevers*;⁴⁹ and a discussion on the impact of the bodily mixtures on the soul by Alexander of Aphrodisias in which Michael praises 'the all-knowing Galen' for having discussed the topic in his *The Capacities of the Soul Depend on the Mixtures of the Body*.⁵⁰ In another of Michael's commentaries on the Aristotelian *Sophistical Refutations*, he made references to the Galenic *On Linguistic Sophisms*.⁵¹ However, as Sten Ebbesen has shown, most of Michael's material was derived from previous commentators and especially Alexander of Aphrodisias. Michael made some small changes and emendations which suggest that he 'may had a glance at Galen's *On Linguistic Sophisms*'.⁵² Since Anna Komnene was closely connected with the production of these commentaries it is worth searching for allusions or references to Galen in her own work. She was certainly interested in medical matters and, one can assume that, as a highly educated person, she would have had been familiar with the work of Galen, not least through the commentaries of Eustratios and Michael and the discussions that would have accompanied their composition and performance.⁵³ The editors of her long historical account of her father's reign, *Alexiad*, have provided a list of *similia* – passages that may allude to Galenic ones. These are, however, fairly general and I do not think we can use them to attest an intertextual relationship between the two authors.⁵⁴

More evidence of the reception of Galen in the twelfth century can be found in the writings of three additional, largely contemporary, authors of the next generation from Anna Komnene: Michael Italikos (fl. 1136–66), John Tzetzes (c. 1100–80), and Eustathios of Thessaloniki (c. 1115–c. 1195/6). The ancient medical sources used by Italikos have been examined by Aimilios Mavroudis. There is some direct evidence, as when Italikos mentions that he used Hippocratic

Doctrines of Hippocrates and Plato) or ancient and late antique texts such as Alexander of Aphrodisias, Themistios, Nemesios, Simplicios, and others.

49 Michael of Ephesos, *Commentary on Aristotle's 'Parva Naturalia'*, ed. Wendland (1913) 109; Galen, *Diff. Feb.*, 1.10, ed. Kühn (1824) VII.313–15.

50 Michael of Ephesos, *Commentary on Aristotle's 'Parva Naturalia'*, ed. Wendland (1913) 109; on this passage, see Todd (1976: 126–8).

51 When the text was edited it was believed that it was by Alexander of Aphrodisias, hence the edition is in his name; Michael of Ephesos, *Commentary on Aristotle's 'Sophistical Refutations'*, ed. Wallies (1898) 22–3 and 142; the second passage refers to Galen, *Soph.*, 1, ed. Kühn (1827) XIV.584 = ed. Gabler (1903) 2–3.

52 Ebbesen (1981: 78, 268–84).

53 On *theatra* see Magdalino (1993: 339); Mullett (1984: 173–201); and on Anna and medicine, see Buckler (1929: 215–21) and Neville (2016: 1, 18, 131).

54 See Reinsch, Kambylis, and Kolovou (2001: II.264) with references to eight Galenic works.

and Galenic texts for teaching (medicine)⁵⁵ or when he refers to *On Theriac to Piso* in a letter.⁵⁶ However, the lion's share of Galenic references comes from a monody Italikos wrote on the death of the court physician Michael Pantechnes. Galen or Galenic texts are not mentioned directly, but Mavroudis has produced two types of evidence to show Italikos' use of Galen. The more convincing type consists of technical terms and phrases in use in the text and otherwise only attested in Galen, i.e. *technikos stochasmos* and *amphismilē*.⁵⁷ The second and, in my mind, less convincing type of evidence consists of the headlines of Pantechnes' engagement with various aspects of medical practice that are phrased in a way that alludes to titles of Galenic books. For example, Pantechnes occupied himself with the differences of diseases and therefore Mavroudis suggests this is a reference to *On the Different Kinds of Disease*. In my mind this shows a good familiarity with the titles of Galen's works, but does not necessarily prove that Italikos (or Pantechnes, for that matter) had actually read all these texts.⁵⁸

John Tzetzes' references to Galen are of a different kind. In one letter and in one of his *Chiliads* (or *The Histories*) he includes a short biography of Galen in order to prove that he did not live in the reign of Nero, but in that of Caracalla.⁵⁹ There are two more references to Galen: 'Galen the physician says that those afflicted with mania and melancholy avoid people and seek solitude and every wilderness', and another very general passage on Galen's views on those suffering from a surfeit of bile and mania.⁶⁰ I have not been able to identify these passages in the Galenic corpus.

Eustathios of Thessaloniki was a particularly learned scholar with an excellent command of ancient literature. His reception of Galen is remarkable insofar as it takes the form of lexical allusions without a semantic connection: in a number of instances he uses words that are characteristic of Galen, but does so

55 Mavroudis (1993: 30, n.11). Michael Italikos, *Epistle* 5, ed. Gautier (1972) 97.

56 Michael Italikos, *Epistle* 32, ed. Gautier (1972) 207.

57 The phrase *technikos stochasmos* comes up in at least eight Galenic texts, but the most numerous examples are found in *On Affected Parts* and *On Crises*, while the use of the term *amphismilē* derives from a passage in the *Anatomical Procedures*, 6.10, ed. Kühn (1821) 11.574.9, *amphismilas* = ed. Garofalo (2000) 389.4, *amphimēlas*; see Mavroudis (1993: 40).

58 Mavroudis (1993: 31–40) lists some 18 works by Galen alluded to in this way in the monody. If we take this at face value it would make Michael Italikos the single most important witness for the reception of the Galenic oeuvre in Byzantine literature.

59 John Tzetzes, *Chiliads*, 12.397, ed. Leone (1968) 468–9; *Epistle* 81, ed. Leone (1972) 121.5–24.

60 John Tzetzes, *Chiliads*, 7.148, ed. Leone (1968) 287; *Epistle* 19, ed. Leone (1972) 36.20–1.

in a different context.⁶¹ These words are: (1) *prokentēsai*, (2) *antepekteinai*, (3) *stenochōrēseos*, and (4) *hypallaxeis*.⁶² Since these words are almost exclusively found in Galen, their use by Eustathios does suggest a direct engagement. Furthermore, Eustathios also makes allusions to certain Galenic passages throughout his work. There is a vague reference to the composition of pastilles from snake venom that could refer to various passages in *On Antidotes*;⁶³ a clear allusion to the discussion on bone marrow in *On the Function of the Parts of the Body*;⁶⁴ an allusion on how bear cubs are born unformed and misshapen;⁶⁵ and another on how the excessive consumption of dried figs leads to outbreaks of lice.⁶⁶

In the last part of the same century, Michael Glykas (1125–1204[?]) also shows a good knowledge of Galen. In a section on the nature of serpents in his *Chronicle* he makes use of *On Theriac to Piso* and even cites a passage from the work when discussing the basilisk.⁶⁷ In another passage of the same work discussing the punishment of the giant Tityos he refers to the fact that Galen includes contradictory information: ‘in his book on diagnostics he says that an eagle devoured his [Tityos] liver whereas in his single volume on the disposition of the soul by vultures’.⁶⁸ In fact Galen cites Homer (who mentions vultures) in his *On the Doctrines of Hippocrates and Plato*;⁶⁹ it is probably a slip that has him mention an eagle instead of vultures in *On Affected Parts*.⁷⁰

61 Such cases would have been very hard to track if not identified by Eustathios’ modern editor, Wirth (1999).

62 Eustathios of Thessaloniki, *Oration* 7, ed. Wirth (1999) 136.28; Galen, *Comp. Med. Loc.*, 1.2, ed. Kühn (1826) XI.408.2. Eustathios of Thessaloniki, *Oration* 14, ed. Wirth (1999) 240.3; Galen, *Adv. Lyc.* 3, ed. Kühn (1830) XVIIIB.213.15 = ed. Wenkebach (1951) 12.17. Eustathios of Thessaloniki, *Oration* 16, ed. Wirth (1999) 274.29; Galen, *Loc. Aff.*, 2.5, ed. Kühn (1824) VIII.120.18 = 2.10, ed. Gärtner (2015) 364.15–16. Eustathios of Thessaloniki, *Oration* 16, ed. Wirth (1999) 282.8; Galen, *San. Tu.*, 6.5, ed. Kühn (1823) VI.403.5–7 = ed. Koch (1923) 177.19–21.

63 Eustathios of Thessaloniki, *Oration* 9, ed. Wirth (1999) 156.3–5.

64 Eustathios of Thessaloniki, *Oration* 9 ed. Wirth (1999) 159.15–16; Galen, *UP*, 2.16, ed. Kühn (1822) III.159.4–6 = ed. Helmreich (1907) I.116.25–6.

65 Eustathios of Thessaloniki, *On the Improvement of Monastic Life*, ed. Metzler (2006) 18; Galen, *Comp. Med. Loc.*, 1.2, ed. Kühn (1826) XI.425.15–426.1.

66 Eustathios of Thessaloniki, *On the Improvement of Monastic Life*, ed. Metzler (2006) 200; Galen, *Bon. Mal. Suc.*, 8, ed. Kühn (1823) VI.792.13–793.2 = 7, ed. Helmreich (1923) 415.11–16, or *Alim. Fac.*, 2.8, ed. Kühn (1823) VI.571.15ff = ed. Wilkins (2013) 101.20ff.

67 Michael Glykas, *Chronicle*, ed. Bekker (1836) 109–13; the citation from Galen, *Ther. Pis.*, 8, ed. Kühn (1827) XIV.233.15ff = ed. Boudon-Millot (2016) 35.8ff.

68 Michael Glykas, *Chronicle*, ed. Bekker (1836) 211.

69 Galen, *PHP*, 3.7 and 6.8, ed. Kühn (1823) v.347–8 and v.584 = ed. De Lacy (1978) I.218.4–14 and II.424.24–9.

70 Galen, *Loc. Aff.*, 3.5, ed. Kühn (1824) VIII.160.

A final allusion in Glykas' *Chronicle* refers to a passage in which Galen compares the lack of depravity in Mysia with its abundance in Rome; however, such a passage is not found in the extant writings of the author.⁷¹ Glykas also refers twice to Galen in his *On Problems of Holy Scripture*: in question 40 he cites Galen on the fact that a good mixture (*eukrasia*) is the result of the equal share (*isomoiria*) of the qualities;⁷² in question 81 he cites a passage from Galen's *On Bloodletting, against the Erasistrateans at Rome* on epileptic paroxysm.⁷³

The Metropolitan of Athens Michael Choniates (1140–1220), brother of the historian and theologian Niketas Choniates, provides insight into interesting aspects of Galen's reception in the early years of the thirteenth century. In a letter to Euthymios Tornikes, Choniates mentions an encounter with the *archiatros* George Kallistos with whom he read Galen's *On Anatomical Procedures* and *On the Doctrines of Hippocrates and Plato*.⁷⁴ In another letter to the physician Nicholas Kalodoukes, Choniates thanks him for sending *On the Preservation of Health* in lieu of attending to his health, which had deteriorated as a result of his poor diet on the island of Kea.⁷⁵ Choniates had obviously read the work as he includes a broad summary in the letter.

Although a very large number of manuscripts of Galenic works were copied between the thirteenth and fifteenth centuries, there is not, in my mind, a comparative growth in the number of references to such works being read and referenced by Byzantine scholars in the period. What is perhaps telling is the reference of Galen in tropes that suggest he was very well known and appreciated. Just to give a few characteristic examples, the hesychast champion and hagiographer Joseph Kalothetos (d. after 1355/56) called the ascetic saint Gregory of Nikomedia an 'untrained Galen' for helping the sick.⁷⁶ This trend is much clearer in the writings of Manuel Philes (1275–1345), a poet who dominated his era with a vast amount of (mostly) commissioned epigrams for the elites. There are over twenty references to Galen in a variety of tropes; in most cases the recipient of the epigram is compared to Galen. Some characteristic cases are worth citing: to the aunt of the *basileus* (Emperor Andronikos II,

71 Michael Glykas, *Chronicle*, ed. Bekker (1836) 251–2. There is a further reference to Galen in the same work, ed. Bekker (1836) 430, when Glykas reports of an alleged meeting between Mary Magdalene and Galen, but he refutes it as a legend.

72 Michael Glykas, *On Problems of Holy Scripture*, 40, ed. Eustratiades (1906) 496; Galen, *Temp.*, 1.4, ed. Kühn (1821) 1.534.1–2 = ed. Helmreich (1904) 16.15–16.

73 Michael Glykas, *On Problems of Holy Scripture*, 81, ed. Eustratiades (1912) 339; Galen, *Ven. Sect. Er. Rom.*, 9, ed. Kühn (1826) XI.241.13–15.

74 Michael Choniates, *Epistle* 102, ed. Kolovou (2001) 156.

75 Michael Choniates, *Epistle* 115, ed. Kolovou (2001) 190.

76 Joseph Kalothetos, *Life of St. Gregory of Nicomedia*, 2 and 16, ed. Tsamis (1980) 504 and 517.

r. 1282–1328) and mother of the *megas domestikos* (this must be Maria-Martha Palaiologina, sister of Emperor Michael VIII), Philes writes of his many illnesses and ailments and bids her to ‘appear like a new Galen’ and give him a drug;⁷⁷ he extols the patriarch of Constantinople Niphon (1310–14) as ‘a common Galen for those in grief’;⁷⁸ he calls the physician Demetrios Pepagomenos ‘a new Galen’;⁷⁹ and even the emperor Andronikos II is termed ‘more skilful than Galen’.⁸⁰ The references in Philes imply familiarity with Galen without necessarily also suggesting a deeper engagement with his work.

Nevertheless, some important Palaiologan authors were obviously reading and engaging with Galen. Constantine Akropolites (c. 1250–before 1324) cites in a letter a passage from Galen’s *On Demonstration*. Given that it is highly unlikely that Akropolites could have had access to this work that had been long lost,⁸¹ he must have been citing a passage from *On the Doctrines of Hippocrates and Plato* in which Galen himself had made reference to *On Demonstration*.⁸² It is hardly surprising to see that Theodore Metochites (1270–1332), the statesman and polymath, was engaging with Galen. In one of his *Sententious Remarks* (*Semeioseis Gnomikai*) in which he discusses Aristotle’s natural science and logic he uses Galen as an example of the inferiority of all those thinkers who came after Aristotle: although Galen’s medical writings ‘have a strong position among men, truly being of the greatest use to everybody’ and ‘are guarded by physicians as genuine treasures for human well-being and prosperity ... the many books which the same Galen wrote in opposition to Aristotle ... where are they now and by whom are they studied?’⁸³ Although the passage is too general to disclose Metochites’ knowledge of specific Galenic texts, it does suggest he was quite well versed in them. Metochites’ pupil, Nikephoros Gregoras (1295–1360) uses a similar passage in two of his works that refers to Galen’s discussion of veins and arteries in *On the Doctrines of Hippocrates and Plato*, suggesting a good understanding of the text.⁸⁴ In another text, Gregoras makes

77 Manuel Philes, *Poem* 22, ed. Gedeon (1882/3) 659.

78 Manuel Philes, *Poem* 88, ed. Miller (1855) 1.91.

79 Manuel Philes, *Poem* 85, ed. Miller (1857) 11.142.

80 Manuel Philes, *Poem* 40, ed. Miller (1857) 11.80.

81 See above with n.47.

82 Constantine Akropolites, *Epistles*, 195, ed. Romano (1991) 261.97–101; the Galenic passage is *PHP*, 9.9, ed. Kühn (1823) v.794.16–18 = ed. De Lacy (1980) 11.600.18. In the same letter (lines 102–5), according to the editor, there may be a loose reference to the discussion on the senses and sense organs in the pseudo-Galenic *Medical Definitions*, 115, ed. Kühn (1830) x1x.378–9, but the passage is quite general and need not derive from that text.

83 Theodore Metochites, *Sententious Remarks*, 12.6, ed. and tr. Hult (2002) 122–5.

84 Nikephoros Gregoras, *Flōrentios*, 1292–9, ed. Leone (1975) 111; and *Questions and Answers*, 4, ed. Leone (1970) 505. Galen, *PHP*, 6.8, ed. Kühn (1823) v.575 = ed. De Lacy (1980) 11.416–17.

a reference to the Hippocratic and Galenic notions of critical days and especially on the number seven, suggesting familiarity with *On Critical Days*.⁸⁵ A surprising piece of Galenic reception is found in an unexpected place: an apology of hesychast theology by the monk and Aristotelian scholar Neophytos Prodromenos (fl. second half of the fourteenth century) includes a direct citation (some 15 printed lines) from the Galenic *On Problematical Movements*, which is no longer extant as a whole in Greek.⁸⁶ Given that Neophytos was a monk at the Constantinopolitan monastery of St John in Petra, which boasted of an important library, it is safe to assume that this Galenic work would have been available to him there.⁸⁷

It is appropriate to finish this overview of Galenic reception with a scholar at the threshold between the Byzantine and the Ottoman period, the first post Byzantine patriarch of Constantinople and anti-unionist champion George-Gennadios Scholarios (c. 1400–c. 1473). In his rich oeuvre the Aristotelian Scholarios could not fail to engage with Galenic texts. In his *Notes on Aristotle's 'On Sleep and Sleeplessness'* he writes that Galen names the liver as the place where blood was produced.⁸⁸ This could come from a number of Galenic texts.⁸⁹ Similarly, when Scholarios refers to Galen's *hiera* this could point to numerous texts in which this antidote is described.⁹⁰ Since in both cases the reference is to Galenic ideas that may be seen as common property for intellectuals of his day, the passages tell us little about the actual reception of Galen in the very last years of the Byzantine Empire.

My brief overview has shown that some twenty-one works by Galen were certainly read and employed in the writings of Byzantine (non-medical) authors from the end of late antiquity until the end of Byzantium. The text that

85 Nikephoros Gregoras, *On the Number Seven*, ed. Sbordone (1936) 128. The importance of the number seven is discussed throughout *On Critical Days*, but one can point to *Dec.*, 1.2, ed. Kühn (1825), 1x.774–5, for the initial emphasis on this number. On Gregoras and Galen, see Manolova (2014: 105).

86 On the work see the edition by Bos and Nutton (2012), 19–20 on the passage. The first scholar to spot this passage was Larrain (1993: 265–73). The passage can be found in the modern critical edition of Neophytos' theological works by Kalogeropoulou-Metallinou, *Oration 2*, 14.353–369 (1996) 383–4. The editor has misidentified the citation as deriving from Galen's *UP*, 17.5–16.

87 On the library see Gamillscheg (1981: 283–3); on the monastery see Asutay-Effenberger (2008: 299–325) with previous bibliography.

88 Gennadios Scholarios, *Notes on Aristotle's 'On Sleep and Sleeplessness'*, 4.74–5, ed. Jugie, Petit, and Siderides (1936) 459.31–2.

89 For example, Galen, *UP*, 4.19, ed. Kühn (1822) III.336 = ed. Helmreich (1907) 1.247 or *PHP*, 6.8, ed. Kühn (1823) v.572 = ed. De Lacy (1980) II.414.

90 See, for example, Galen, *Comp. Med. Loc.*, 8.2, ed. Kühn (1827) XIII.129; and *San. Tu.*, 5.9, ed. Kühn (1823) VI.354 = ed. Koch (1923) 153.

emerges as the most prominent in the Byzantine reception of Galen is *On the Doctrines of Hippocrates and Plato*, a long and complex text whose aim is to prove that the Hippocratic and especially the Platonic ideas about the body were correct in clear opposition to the Stoics and Aristotle (e.g. on the brain, not the heart controlling the nerves).⁹¹ Michael Psellos is the first Byzantine author to use this text in his work and from then on it was actively read until the end of the Byzantine period. More generally it seems that Psellos represents a watershed in the active engagement with Galen in Byzantium: it gathered momentum and reached a peak in the twelfth century, clearly the most active period of serious engagement with the Galenic corpus. The majority of texts used by non-medical Byzantine authors came from the medical, rather than the philosophical Galenic output. Metochites' observation that Galen's philosophical texts (at least those written in opposition to Aristotle) had vanished seems to be corroborated by the findings above.⁹²

This has only been a very preliminary look into the details of Galen's reception in Byzantium. To do justice to this complex issue separate studies would have to be devoted to each of these Byzantine authors that I have briefly outlined above (and to the many more I have omitted). One would need to look much more closely for cross references to his numerous works that may yet elude us and link these with the extant manuscripts of his work. Only then will we be able to determine with more certainty the extent and depth of the Byzantine's fascination with this great master of antiquity.

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91 See De Lacy (1978) 1.55–8; and Nutton (1978: 98–100). On the manuscripts of the text, ranging between the thirteenth and the fifteenth centuries, see at Pinakes <http://pinakes.irht.cnrs.fr/notices/oeuvre/3544/> (accessed 4 December 2017).

92 See also Nutton (2007).

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PART 2

Galen in the Medieval Islamic World



The Reception of Galen in the Syriac Tradition

Siam Bhayro

It is useful to distinguish between three phases when analysing the reception of Galen in the Syriac tradition – indeed, it is probably preferable to speak of Galen's reception in three distinct Syriac traditions.¹ The first pertains to that of Sergius of Resh 'Aina, who, in the early sixth century, initiated the first systematic program of scientific translations from Greek into an oriental language.² The second occurred in the early Abbasid period, especially with the efforts of Ḥunayn ibn Ishāq and his successors in the ninth century.³ The third happened between the eleventh and thirteenth centuries as part of the so-called Syriac Renaissance.⁴ As the historical and socio-linguistic contexts of each phase is distinct, leading to contrasting treatments of Galen, each phase merits its own treatment. Furthermore, recognising the underlying reasons for the distinguishing features of each phase helps us to correct some major misconceptions regarding the Syriac receptions of Galen.⁵

1 Sergius of Resh 'Aina (d. 536)

Sergius of Resh 'Aina was educated in Alexandria and worked as a physician, priest, and diplomat during the tumultuous Christological controversies that seized the eastern church following the Council of Chalcedon (451). Indeed, his death, while returning from Rome following a mission to Pope Agapetus (r. 535–6) on behalf of the Bishop of Antioch, was celebrated by the Monophysites.⁶ History has not been kind to Sergius, with accusations of avarice

1 Compare the approach of Strohmaier (1994: 1987–2017).

2 Bhayro (2016b: 121–8). For an excellent treatment of the early reception of Galen in Syriac, see Muraviev (2014).

3 Meyerhof (1926a: 685–724); Meyerhof (1926b: 33–51); Strohmaier (1991); Pormann and Savage-Smith (2007: 24–31); see also Cooper (Chapter 9) in this volume.

4 Teule (2010: 1–30).

5 Bhayro (2017a).

6 Hugonnard-Roche (1989: 1–17); Hugonnard-Roche (1997: 121–43); Hugonnard-Roche (2004: 123–231); Bhayro (2008: 743).

and licentiousness cast against his character, and questions raised against the quality of his scholarship. Indeed, we are left with the task of trying to uncover the true Sergius, rather than the Sergius of his theological opponents,⁷ or the Sergius of the ninth-century Abbasid translators,⁸ the Sergius of the later medieval historians,⁹ or even the Sergius of modern historians who have, for the most part, uncritically accepted the testimony of his detractors.¹⁰

In addition to the often overt hostility of the surviving sources, the other problem we encounter when assessing the accomplishments of Sergius as a translator of Galen is the comparative dearth of surviving direct textual witnesses. In terms of surviving manuscripts of Syriac translations of Galen, which are likely to derive from Sergius and his circle, we have only the following:

BL Add 14,661 – a seventh-century copy of books 6–8 of the *Penqitā dāsammāne pəšīte* (*Book of Simple Drugs*), i.e. the Syriac translation of Galen's *On the Capacities of Simple Drugs*.¹¹ This copy includes Sergius' introductions to each book, dedicated to his colleague Theodore, so we know for certain that the translation derives from Sergius and his circle. In the nineteenth century, the manuscript was catalogued by William Wright,¹² and a partial edition was published by Adalbert Merx.¹³ There followed a long hiatus in scholarly attention to this manuscript, which ended with two very important articles published around a century later by Rainer Degen.¹⁴ Over twenty years later, the present author began a new analysis of BL Add 14,661,¹⁵ and, together with Sebastian Brock, published Sergius' introduction to book 6.¹⁶ A full edition with English translation has been prepared as part of the *Floriental* project in Paris, under the auspices of Hawley, and should appear soon.¹⁷

7 E.g. pseudo-Zachariah; see Bhayro (2017a).

8 E.g. Hunayn ibn Ishāq; see Bhayro (2017a).

9 E.g. Ibn Abi Uṣaybi'ah and Bar Hebraeus; see Bhayro (2005: 153–7); (2017a).

10 E.g. Isaacs, Goodman, and Gutas; see Bhayro (2017a).

11 Galen, *SMT*, ed. Kühn (1826) XI.379–XI.377, with Books 6–8 = XI.789–XI.158; see also Kessel (2016b: 176).

12 Wright (1872: 1187).

13 Merx (1885: 237–305); see also the remarks in Löw (1886: 763–5).

14 Degen (1972: 116, 120); Degen (1981: 146–7).

15 Bhayro (2005: 147–65).

16 Bhayro and Brock (2013: 38–40).

17 For more details of *Floriental*, see Afif et al. (2016: 261–8).

BL Add 17,156, fols 13–15 – fragments of eighth-century copies of translations of Galen, which probably originate from Sergius and his circle.¹⁸ Fol. 13 contains parts of chapters 28–30 of Galen's *Art of Medicine*,¹⁹ while fol. 14 contains parts of chapters 23–24 of the same work.²⁰ Fol. 15 contains book 2, chapters 57–9 of Galen's *On the Capacities of Foodstuffs*.²¹ Again in the nineteenth century, these folia were edited, without translation, by Eduard Sachau,²² and then catalogued by Wright.²³ And, again around a century later, Degen attempted to bring them to the attention of scholars.²⁴ More recently, fol. 15 was edited and translated by the present author in a joint article with John Wilkins.²⁵

The Syriac Galen Palimpsest (SGP) – sold by auction in 1922 by the Leipzig book dealer Karl Hiersemann, the auction catalogue contained a detailed description written by Anton Baumstark, which referred to the importance of its undertext for the history of the Syriac medical tradition.²⁶ It was purchased by the Swiss industrialist Arnold Mettler-Specker, who deposited it in the Zentralbibliothek, Zurich, with the signature Zürich Or.77. His heirs sold it by auction in New York in 1948.²⁷ Between 1948 and its purchase by its present owner at a Sotheby's auction in 2002, its whereabouts remained unknown. In 2009, Brock identified one freshly imaged leaf of the undertext of SGP as containing part of a Syriac translation of Galen's *On the Capacities of Simple Drugs*,²⁸ according to the same text preserved in BL Add 14,661 73r.²⁹ Further identifications were made in 2010 by the present author, who was then invited to name the manuscript. The last seven years have witnessed an acceleration in research on both SGP and BL Add 14,661, centred on two major research projects, and a plethora of publications.³⁰ Significantly, many more leaves of

18 See the detailed description in Kessel (2016b: 173–4).

19 Galen, *Ars Med.*, 28–30, ed. Kühn (1821) I.384–7 = Boudon (2000) 364–8.

20 Galen, *Ars Med.*, 23–4, ed. Kühn (1821) I.369–72 = Boudon (2000) 348–52.

21 Galen, *Alim. Fac.*, 2.58–61, ed. Kühn (1823) VI.643–7 = 57–9, ed. Wilkins (2013) 163–7.

22 Sachau (1870: 88–97).

23 Wright (1872: 1187–8).

24 Degen (1972: 116); Degen (1981: 135, 140).

25 Wilkins and Bhayro (2013: 95–114).

26 Hiersemann (1922: 14); see also Kessel (2016b: 176–7).

27 Nünlist (2008: xix–xx); Strothmann (1977: 287–8).

28 Galen, *SMT*, 8.22.9, ed. Kühn (1826) XII.155–6.

29 Bhayro and Brock (2013: 28–9).

30 In chronological order: Bhayro, Hawley, Kessel, and Pormann (2012: 261–4); Bhayro and Brock (2013: 25–43); Bhayro, Hawley, Kessel, and Pormann (2013: 131–48); Bhayro,

SGP have been identified, and it is now thought that it contained more than BL Add 14,661's books 6–8 – indeed, leaves from books 2, 3, 4, 5, and 9 have already been identified.³¹ SGP has been tentatively dated to the first half or the middle of the ninth century, which suggests that Sergius' translations of Galen continued to be copied at the time when Ḥunayn ibn Ishāq flourished.

It is immediately obvious, therefore, that the study of the sixth-century Syriac translations of Galen is very much in its infancy. Given that most of the sources have been known to modern scholarship for well over a century, their neglect until very recent times is all the more remarkable. One consequence of this neglect is that they have remained beyond use for most scholars. Two examples should suffice to demonstrate how problematic this situation is. The first relates to the surviving fragments of *Art of Medicine* in Syriac, both in BL Add 17,156, fols 13–14, as well as in BL Or. 9360 (for which, see below). Veronique Boudon's otherwise excellent and thorough edition of the various versions of *Ars medica* was unable to usefully integrate the Syriac evidence.³² The second example relates to BL Add 14,661, which, lacking a thorough edition, was not included by Philippe Gignoux in his lexicon of Syriac pharmacological terms.³³

Another consequence of this neglect is the general acceptance of a series of unfounded assertions in modern scholarship regarding Sergius and his translations of Galen. Regarding the quality of his translations, it is often asserted that, instead of producing sensible, reader-orientated translations that reflect the overall sense, Sergius took a literal or mechanical word-by-word approach, thus producing translations that were inferior to the Arabic translations of the Abbasid period.³⁴ The most recent research, on the other hand, very much suggests that Sergius took a reader-orientated approach to translation, with a pragmatic use of Greek loanwords. Moreover, his translations proved to be immensely useful for the later Syriac and Arabic translations produced in the

Pormann, and Sellers (2013: 299–302); Bhayro and Hawley (2014: 285–318); Hawley (2014: 237–72); Kessel (2016a: 469–96); Afif et al. (2016: 261–8).

31 Afif et al. (2016: 261–8). Other palimpsests that may yield important Galenic material in Syriac include BL Add 14,490, BL Add 17,127, and Deir al-Suryān, Syriac Fragment 41 – see Kessel (2016b: 179, n.35); Degen (1981: 160).

32 See Boudon (2000: 230–4); cf. Bhayro (2013: 123–44).

33 See Gignoux (2011: 13); for an assessment of Gignoux's many important contributions to the study of Syriac medical texts, see Brock (2011: 101–2).

34 E.g. Goodman (1990: 488); Isaacs (1990: 344); Whipple (1967: 26–7).

Abbasid period.³⁵ This last point relates to another common assertion, namely that Syriac was superseded by Arabic as the language of science, and only functioned, in the Abbasid period, as a link between Greek and Arabic.³⁶ Again, recent studies suggest that Syriac retained its status and prestige as a language of science throughout the medieval period.³⁷ It has also been asserted that, because the contexts in which Sergius and Ḥunayn worked were so different, the earlier Syriac translators lacked sufficient financial motivation to produce the best quality translations, whereas the Abbasid period translators were driven to excellence by market forces.³⁸ This would again appear to be challenged by recent discoveries, which suggest that sufficient financial motivations existed even in Sergius' time. Furthermore, from his own accounts, it is clear that Sergius also possessed what should be considered to be a higher motivation to pursue excellence – a devotion to scholarship for theological as well as philosophical and medical purposes.³⁹ This raises two other related points, namely the aim and scope of Sergius' translation activities. In the past, it has been assumed that Sergius was more or less trying to create a Syriac version of the Alexandrian Galenic syllabus.⁴⁰ It now appears, however, that Sergius was probably dissatisfied with the practical approach of the Alexandrian syllabus, and that he reacted against this by translating many more Galenic works, including the more theoretical material, as part of a comprehensive translation project that also included other authors, especially Aristotle.⁴¹

As more texts pertaining to Sergius and the sixth-century Syriac translations of Galen are published and analysed, it is likely that the above positions will become more nuanced.⁴² As things stand, however, compared to the previous century, the field has rapidly advanced recently, and many commonly held opinions have been shown to be highly problematic.

35 For a detailed discussion, see Bhayro (2017a).

36 E.g. Gutas (1998: 138–9).

37 See Bhayro (2017a); see also the discussion below on Ḥunayn, particularly the second observation on p. 169.

38 E.g. Gutas (1998: 138, 141).

39 See Bhayro (2017a).

40 E.g. Lieber (1981: 174–5); Nutton (2008: 362). On the reception of Galen in late antique Alexandria, see Garofalo (Chapter 3) in this volume.

41 Thus Bhayro (2016b).

42 In addition to those texts already mentioned, Kessel is preparing an edition of Damascus Syrian Orthodox Patriarchate 12/25, which preserves part of a commentary on book 6 of Hippocrates' *Epidemics* that appears to originate in the same milieu as Sergius and which draws heavily on Galen's commentary on the same text: see Kessel (2012: 93–123); Kessel (2016b: 178–9); Degen (1981: 151).

2 Ḥunayn ibn Ishāq (809–73)

As there is a contribution devoted to Ḥunayn in this volume, this section will briefly mention one extant Syriac work, and will then make five points regarding his Syriac translations of Galen.⁴³

Ḥunayn compiled a work on the medicinal properties of foods, drawing upon several sources including Rufus of Ephesus, Hippocrates, and Dioscorides, as well as Galen's *On the Capacities of Foodstuffs*, which makes up most of the text. To date, four manuscripts containing parts of this text have been discovered: Mingana Syr. 594, fols 58v–150r; Mingana Syr. 661 (only four fols); Paris Syr. 423, fols 54v–165v; Leuven CSCO syr. 22, fols 30v–91v. In Syriac, the extant titles are *Mamllā d'āsawwātā 'al sammāne* (*The Treatise of the Physicians concerning Drugs*; in the Paris manuscript) and *Mamllā dāḥakime 'al zar'one wā'eqāre wābesrāne wā'ilāne wāḥāshūthun* (*The Treatise of the Sages concerning Grains and Roots and Meats and Trees and their Usefulness*; in Mingana Syr. 594).⁴⁴ This text is to be published as part of Hawley's *Floriental* project, which should allow scholars to better appreciate Ḥunayn's translation technique and to make more certain comparisons with that of Sergius.⁴⁵ At this point, however, the following five observations can still be made.

First, while Ḥunayn's *Risālah* (*Epistle*) is undoubtedly our most important source regarding the translations of Galen's works into Syriac and Arabic up until his day, it is now clear that Ḥunayn's knowledge was incomplete.⁴⁶ For example, Ḥunayn states that Sergius translated the second part of Galen's *On the Capacities of Simple Drugs* (i.e. books 6–11), but not the first part (i.e. books 1–5). Recent research on the Syriac Galen Palimpsest, however, suggests that Sergius probably did translate the first part as well – something that, despite his meticulous research, apparently eluded Ḥunayn.⁴⁷ The best approach to using his *Risālah* (*Epistle*), therefore, is to assume that Ḥunayn is correct when he describes what was translated into Syriac, as these statements are probably based upon manuscripts that he had consulted or other reliable sources. On

43 In addition to Cooper's contribution in this volume (Chapter 9), see Strohmaier (1991: 163–70); (1994: 1987–2017); Pormann and Savage-Smith (2007: 19, 24–33).

44 For more details and further references, see Kessel (2016b: 174–5); Hawley (2008: 81–104).

45 See the example given in Bhayro, Hawley, Kessel, and Pormann (2013: 139–43).

46 Full title: *Risālah Ḥunayn ibn Ishāq ilā 'Alī ibn Yaḥyā fī ḍikr mā turjima min kutub Jālīnūs bi-'ilmihī wa-ba'ḍ mā lam yutarjam* (*The Epistle of Ḥunayn ibn Ishāq to 'Alī ibn Yaḥyā concerning those of Galen's books that have been translated, to his knowledge, and some of those that are not translated*); see Bergsträsser (1925); Ullmann (1970: 36–7); Lamoreaux (2016).

47 See Bhayro (2016b: 122–3).

the other hand, we should remember that, by his own admission, Ḥunayn's account is not exhaustive and other Syriac translations certainly existed.

Second, despite what is often asserted, we should remember that Ḥunayn was not simply producing (or refining previous) Syriac translations of Galen in order to facilitate the ultimate goal of producing Arabic translations of Galen.⁴⁸ Indeed, as was already pointed out almost a century ago by Max Meyerhof, the choice of Syriac as a target language was not determined by its stage in an overall 'Graeco-Arabic' translation process, but by the creed of the client for whom the translation was made – put simply, Syriac translations were made for Christian clients and Arabic translations were made for Islamic clients (albeit often on the basis of a Syriac intermediary).⁴⁹ Furthermore, it would be a mistake to assume that the only trajectories of translation among Ḥunayn and his colleagues were Greek into Syriac, Syriac into Arabic, and Greek into Arabic. Indeed, Ḥunayn mentions three instances in which his nephew Ḥubaysh translated a text from Arabic into Syriac.⁵⁰ In view of this, the tendency for modern scholarship to speak of a 'Graeco-Arabic' translation project in the Abbasid period appears to be flawed. It would be more accurate to speak of an Abbasid 'Graeco-Syriac/Arabic' translation project.

Third, as Peter Pormann has recently suggested, it appears that Ḥunayn, when translating Galen, was much more indebted to Sergius than he often suggests.⁵¹ Again, at present, our analysis of the primary sources remains at a primitive level, so the fact that such an assessment can be made even now suggests that, in years to come, we may begin to better appreciate Sergius' lasting impact as a translator of Galen, especially on Ḥunayn and his colleagues.⁵²

This brings us to our fourth point, namely the rise of the legend of Ḥunayn. It is well known that Ḥunayn was not shy in promoting his own translations at the expense of previous efforts and rival translators. But the legend of Ḥunayn really developed among later writers. Olsson has recently assembled the relevant sources, beginning around a century after Ḥunayn with Ibn Juljul (944–c. 994) and ending with the thirteenth-century biographers. Interestingly, it is not until the account of Ibn Abī Uṣaybi'ah (d. 1270) that we read an explicit exaltation of Ḥunayn in which the efforts of Sergius are denigrated – previous accounts tended to assert that Ḥunayn was preeminent amongst his own

48 E.g. Gutas (1998: 139).

49 Meyerhof (1926a: 711); see also Bhayro (2017a).

50 See Dols (1989: 48); Bhayro (2017a).

51 See the remarks of Pormann in Bhayro, Hawley, Kessel, and Pormann (2013: 143).

52 Regarding evidence for Sergius' impact well beyond his lifetime, consider also the Judeo-Arabic translation of Sergius' introduction to another (pseudo-)Galenic work: see Bos and Langermann (2009: 179–204); Kessel (2016b: 178).

generation.⁵³ In terms of accounts that, according to Olsson, can be said to be more or less contemporary with Ḥunayn, the emphasis is again on Ḥunayn as preeminent amongst the early Abbasid translators (Abū Ma'shar) and especially expert in the works of Galen (Ibn al-Munajjim).⁵⁴ The exception is a first-hand report by Yūsuf b. Ibrāhīm b. al-Dāya, which is preserved by the thirteenth-century writers Ibn al-Qifṭī (c. 1172–1248) and Ibn Abī Uṣaybi'ah. In this account, Ḥunayn initially falls out of favour with the medical establishment in Baghdad, only to win them over a few years later with his brilliance as a translator of Galen.⁵⁵ Crucially, although Jibrā'il b. Bukhtīshū' exalts Ḥunayn and states that he will eclipse Sergius, his exaltation of Ḥunayn contains no criticism of Sergius – indeed, for the passage to have its intended effect, Sergius' own reputation must itself have been both intact and significant. It is only with the later Ibn Abī Uṣaybi'ah that this is turned into a negative assessment of Sergius. It should also be noted that the same tradition preserved in Ibn al-Qifṭī and Ibn Abī Uṣaybi'ah also appears in the account of Bar Hebraeus (for whom, see below), but in a more nuanced manner that appears to give more credit to Sergius.⁵⁶

Finally, despite the above, it remains clear that there are important distinctions between the translations produced in the ages of Sergius and Ḥunayn, with compelling reasons why we would expect Ḥunayn's translations to be different. Rather than accept the often crude explanations proffered by a number of scholars,⁵⁷ we should adopt the more nuanced approach that has been outlined in a series of papers by Brock.⁵⁸ To give but two examples: first, the intervening centuries between the ages of Sergius and Ḥunayn witnessed a substantial evolution in the Syriac language, with considerable morphological innovations, that led to an expansion of the available lexicon;⁵⁹ second, there was a significant difference in the socio-linguistic contexts in which they each worked, with the status and role of Greek amongst the target audience of the translations having greatly diminished by Ḥunayn's time.⁶⁰ Such factors would necessitate a change in approach to translation and probably account for many of the differences between the translations of Sergius and Ḥunayn.

53 Olsson (2016: 32–6).

54 Olsson (2016: 37–9, 42–3).

55 Olsson (2016: 39–41).

56 Bhayro (2017a).

57 E.g. Goodman (1990: 488); Isaacs (1990: 344).

58 See, e.g., Brock (1991: 139–62); Brock (1994: 149–60); Brock (2004: 3–14).

59 Brock (2004: 9).

60 Brock (2004: 7).

As stated above, therefore, the often-proffered notion that Sergius translated *ad verbum* while Ḥunayn translated *ad sensum* has now been discredited.⁶¹

Before we move on to the third phase, it should be noted that Syriac translations of Galen are often quoted in the lexicographical works of the tenth-century Nestorian scholars Bar 'Ali and Bar Bahlūl.⁶² Once these important citations are collected and subjected to a systematic analysis, we will have a much better understanding of the Syriac reception of Galen in the Abbasid period.

3 The Syriac Renaissance (Eleventh to Thirteenth Centuries)

The eleventh to thirteenth centuries witnessed an intellectual flourishing in Syriac scholarship, which has been labelled as the 'Syriac Renaissance'.⁶³ This third golden age in Syriac scholarship is most readily associated with Bar Hebraeus (1226–86), who produced numerous works across multiple fields, including philosophy, the natural sciences, theology, and history.⁶⁴ The extent of the reception of Galen during the Syriac Renaissance is nicely illustrated by the fact that Bar Hebraeus quotes from Galen at least three times in his main historical work.⁶⁵ Most of Bar Hebraeus' scientific works remain unpublished or without a systematic analysis – it is likely that as more work is done much more will be discovered in relation to the reception of Galen in this period.

The reception of Galen during the Syriac Renaissance can also be discerned in the various anonymous Syriac medical encyclopaedic compilations that were produced in this period, perhaps the most famous of which is BL Or. 9360, a copy of a twelfth-century medical compendium that was hurriedly made for Ernest Alfred Wallis Budge when he visited Alqosh in 1894. Budge subsequently published BL Or. 9360 as the *Syriac Book of Medicines* (*SBM*).⁶⁶ Some years earlier, Richard Gottheil had published fourteen folios from another Syriac medical compendium, Paris Syr. 325, which, as the present author later

61 See, e.g., Bhayro (2017a).

62 See Gottheil (1899: 186); Endress (2001: 164–8); Bhayro (2005: 151); Kessel (2016b: 169). For Bar Bahlūl's lexicon, see Duval (1888–1901); for Bar 'Ali, see Hoffmann (1874); Gottheil (1908–28).

63 See the discussion in Teule (2010: 1–30).

64 Gregory abū'l-Faraj ibn al-'Ibri; see Wright (1894: 265–81), which is still useful despite being dated. More recently, see Brock (1997: 75–80).

65 This was already pointed out by Degen (1981: 149, 155–6). For Bar Hebraeus' *Chronography*, see Budge (1932).

66 Budge (1913); see Kessel (2016b: 181–3), which also gives further references.

pointed out, parallel sections of BL Or. 9360.⁶⁷ To these two manuscripts, we can now add the following that are listed by Brock: Damascus Syrian Orthodox Patriarchate 6/1 (Mosul, 1224), Harvard Syr. 132 and Mingana Syr. 559 (both copied from a manuscript that was produced in Kaysari in 1221), Paris Syr. 423 and Mingana Syr. 594A (which share some common passages), and Leuven CSCO 21 and 22.⁶⁸ We can further add the following that are listed by Grigory Kessel: Berlin Staatsbibliothek or. fol. 319, Baghdad Chaldean Monastery 939, Paris Syr. 424, and Paris Syr. 425.⁶⁹

The *SBM* itself is actually a compilation of three distinct works, the first of which contains numerous citations of Galen.⁷⁰ Following Budge's publication of the *SBM*, Joel Schleifer published a series of articles in which he identified and analysed these Galenic citations.⁷¹ More recently, the present author has discussed the mechanics of the reception of Galen in the *SBM* (and, presumably, in comparable manuscripts), arguing that texts like the *SBM* demonstrate how Graeco-Roman medicine was integrated with the indigenous Mesopotamian medical system, as well as with elements from further afield (e.g. Iran). In the first part of the *SBM*, the Galenic material has been combined with indigenous medical recipes, which represents a new approach to the reception of Galen in Syriac. At this point, we are no longer dealing with translations of Galen, but with excerpts and thematic abridgements of earlier translations that are perhaps being used to lend an air of respectability or authority to the indigenous herbal remedies. Furthermore, the name of Galen is sometimes appended to medical recipes, again perhaps to lend a degree of authority to them.⁷²

A comprehensive treatment of all these manuscripts is currently being planned by Stefanie Rudolf in collaboration with the present author – this should facilitate a more comprehensive assessment of the reception of Galen in the Syriac Renaissance. As things stand, there are other indications that Galen continued to be transmitted in the Syriac milieu, albeit not in terms of direct translations or copies of earlier translations. For example, Matteo Martelli has discussed CUL Mm. 6.29, fols 120v–129v – an alchemical work that reproduces excerpts from an earlier Syriac translation of books 9–11 of

67 Gottheil (1899: 186–205); see Bhayro (2005: 151).

68 See Brock (2011: 101–2). For the Damascus manuscript, see Kessel (2017: 228–51).

69 See Kessel (2016b: 182).

70 The second part contains astronomical omens and spells, while the third contains so-called 'folk' prescriptions. For an analysis of the second part, see Rudolf (2014).

71 See the list of Schleifer's publications in the references section below; see also Kessel (2016b: 173–4, 180, 183–92).

72 See Bhayro (2013: 123–44); Bhayro (2015: 147–58).

Galen's *On the Capacities of Simple Drugs*.⁷³ Another example relates to Galen's *On Hippocrates' Aphorisms*; Paris arabe 6734 (AD 1205), fols 29v–92v, contains a bilingual Syriac-Arabic edition of Hippocrates' *Aphorisms*, the texts for which were taken from translations of Galen's commentary.⁷⁴ Finally, a recently published Judaeo-Syriac fragment of a list of simples contains a reference to a Galenic citation of Archigenes on the subject of headaches. In this case, the Syriac tradition was deemed of sufficient importance to be directly transcribed into Jewish Aramaic script.⁷⁵

4 Summary

The above periodisation of the receptions of Galen in Syriac is a useful means to properly analyse and appreciate the distinctions of the available evidence – both direct and indirect. The challenges facing scholars of each period differ, as do their contexts. Furthermore, it is important to bring together the study of all three periods, especially as the medieval scholars themselves were clearly aware of the efforts of their scholarly predecessors.

Despite the recent increase in momentum, it is clear that much remains to be done before we can properly describe the receptions of Galen in Syriac. It is highly likely that more manuscripts will come to light over the next few years.⁷⁶ Over forty years ago, Degen discussed the production of a *Corpus Medicorum Syriacorum*, something that remains to be realised.⁷⁷

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74 See Kessel (2016b: 179–80) for discussion and further references.

75 See Bhayro (2012: 153–72); Bhayro (2014: 143–53; 2016a: 630–3; 2017b).

76 See Kessel (2016b: 169); Kessel is currently preparing a list of extant Syriac medical manuscripts.

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Ḥunayn Ibn Ishāq and the Creation of an Arabic Galen

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1 Background

When discussing an epochal cultural transformation such as the Graeco-Arabic Translation Movement that occurred in ninth- to eleventh-century Abbasid Baghdad, it is easy to gloss over the complexity of the process of transmission, and focus rather on its results.¹ The epoch-defining consequence of these translations was that nearly all of the philosophical and scientific works then accessible to the translators were rendered into Arabic, making Islamic civilisation one of the heirs of Graeco-Roman civilisation. Moreover, the translators began a series of transformations of ancient Greek thought, that would be followed by their Latin heirs in medieval Europe, into versatile intellectual tools for investigating nature, especially in medicine. This chapter will sketch the complexity of this epochal cultural transformation, as it applied to Galenic medical thought, by considering some of the translation methods of its most prolific translator, Ḥunayn ibn Ishāq (809–73). To begin with, let us dispense with a myth that has hindered modern understanding of this history.

Modern scholars have taken an historical institution, the House of Wisdom, which was probably the Abbasid royal library, and from the slimmest evidence have concocted an elaborate, but nearly completely mythical, picture of a ‘Translation Institute’. According to this tale, Caliph al-Ma’mūn sponsored a corps of translators who worked on the premises of the House of Wisdom, where he took a personal interest in their work, frequently attending discussions of the freshly translated texts. One version even has Ḥunayn as the director of this institute. It has recently been shown that the actual historical entity called the ‘House of Wisdom’ (*bayt al-ḥikma*) was indeed connected with translation activity, but with the translation of Persian imperial documents, and not with Greek or philosophy.² Its existence and activities were part of the same general fostering of translations by the Abbasid dynasty. This mythical association

¹ All translations are mine, unless otherwise stated.

² Gutas and van Bladel (2012); Gutas (1998: 5–60).

has been traced back to a book published in the 1920s, which was subsequently given support by a respected scholar.³ The evidence suggests that, rather than one grand translation enterprise, there were several translation 'schools', the two most important of which were centred around Ḥunayn the translator and the philosopher Abū Yūsuf Ya'qūb ibn Ishāq al-Kindī (c. 801–73).

The decision of the Umayyad Caliph 'Abd al-Mālik (r. 685–705) to standardise his imperial administration with Arabic, c. 696, replacing Greek in the West and Persian in the East, had enormous political, social, and intellectual consequences for the empire. In effect, Arabic was elevated from being an obscure tribal dialect of the Arabian Peninsula to a universal imperial language of administration, thought, and literature. According to a recent study by George Saliba, this shift in language displaced men with knowledge of Greek and Persian, whose families had served their empires for generations.⁴ Some of these men found new careers as freelance translators who provided the Arabic regime with access to the earlier knowledge. In a growing empire, there was a great need for intellectual tools found in Greek, Persian, and Sanskrit. And translated works generated interest in other works, which were translated, and so on.

2 Ḥunayn and the Arabic Galen

Ḥunayn ibn Ishāq was an outsider, a trait that might explain much of his career. As a Christian Arab from al-Ḥīra, the capital of the former Lakhmid Kingdom in south central Iraq, he belonged to neither the Syriac Christian physician class, nor to the Arab Muslim political ascendancy.⁵ However, he became a broker of knowledge between these groups. He was admitted as a student by one of the leading Syriac physicians, but after they quarrelled, Ḥunayn went into self-imposed exile among former lands of the Byzantine Empire, mastering Greek and gathering Greek medical manuscripts. At some point he realised that he could make a career of translating medical texts. The caliphate supported a class of administrators, eager for Greek knowledge and with surplus cash, willing to pay well for good translations. Returning to Baghdad, Ḥunayn made a dramatic re-appearance at a party, quoting Homer and presenting himself as literate in Greek culture.⁶

3 O'Leary (1922: 112); Meyerhof (1926). See also Gutas and van Bladel (2012).

4 The argument is developed in Saliba (2007: 27–72).

5 See Anawati and Iskandar (1978: 230–49). Also, Toral-Niehoff (2010: 323–47).

6 Strohmaier (1980: 196–200).

Ḥunayn eventually fell foul of certain of the Syriac physicians, who engineered his destruction, manipulating the Caliph to arrest him and confiscate his library and property. If this autobiographical narrative is taken as authentic – although there have been persuasive arguments against this⁷ – the main antagonist was Bukhtishu' ibn Jibrā'il, whom Ḥunayn claims was jealous of his own successful medical career.⁸ Reading between the lines, the real cause for their enmity may have been the fact that Ḥunayn was undermining the Syriac monopoly on medical knowledge, and making a fortune doing so.

In connection with his change of fortune and the loss of his library, Ḥunayn prepared a document that details the translation history of 129 of Galen's works into Syriac and Arabic, by whom, for whom, and often under what circumstances, and sometimes describing a patron's specific requirements. Known as his *Risālah* (*Epistle*), it is of inestimable value for the history of the translation movement. The *Risālah* is addressed to 'Alī ibn Yaḥyā al-Munajjim (d. 888/9), whose father had served al-Ma'mūn as an astronomer. An influential figure at court (about whom more presently), it was to him that Ḥunayn appealed to have his library restored. The *Risālah* documents these translations, much as Galen had described his own works, after he had lost some of his books in a fire.⁹

One of the first things one notices about the *Risālah* is that its information is not consistent with the hypothesis that Ḥunayn was the head of the House of Wisdom translation 'institute'. It is clear, rather, that Ḥunayn is recounting a much more complex process of gathering, revision, and translation, and that it was sponsored by several men, among whom no caliph is mentioned. The last fact belies the notion that these translators were working for the caliph or even in one location. Ḥunayn re-translated many of the texts into Syriac from earlier versions done three centuries earlier, before translating them into Arabic.

Ḥunayn describes the patrons as belonging mainly to two categories: fellow physicians, or Abbasid bureaucrats. For example, about ten books are mentioned as having been translated for 'Alī ibn Yaḥyā (mentioned earlier) either by Ḥunayn, his son Iṣḥāq, or Ḥubayš. The owner of an impressive library, 'Alī was a secretary to Caliph al-Mutawakkil (r. 847–861), and later a provincial governor. It seems easier to understand why physicians would be interested in Galen's works, however, the great interest that state officials had in medical treatises is surprising. For example, several dozen translations were prepared for Muḥammad ibn Mūsā (d. 873), one of the three Banū Mūsā brothers, who

7 Cooperson (1997: 235–49).

8 Ḥunayn's autobiographical account is translated in Saliba (2000: 90–8).

9 Galen, *Lib. Prop.*, ed. Kühn (1830) xix.8–48 = ed. Boudon-Millot (2007) 134–73, and *Ord. Lib. Prop.*, ed. Kühn (1830) xix.49–61 = ed. Boudon Millot (2007) 88–102.

were among the most powerful officials in the Caliphate and famed as mathematicians and engineers in their own right. The fact that Muḥammad was interested in medicine as well testifies either to his eclectic tastes or to the broader way that this age understood the disciplines, in which medicine and mathematics are both part of the grand scheme of natural knowledge.

3 Ḥunayn: Translation Method

Ḥunayn's translations are a key to understanding the formation of the Arabic Galen, because of his influence. Although Ḥunayn notes in the *Risālah* that he followed a consistent method of translation, which his nephew Ḥubayṣ sought to emulate,¹⁰ he does not describe that method. To assist us in the task of determining how Ḥunayn transformed Galen from Greek into Arabic, a scheme for classifying ancient translations, introduced by the Syriac scholar Sebastian Brock, will be employed.¹¹ This scheme reflects the attitude of the translator to the source text. If the translator attempts to convey every textual detail of the source text into the target language, as if the revered source text were not to be changed, this is a 'text-oriented' translation. On the other hand, if the translator has the reader in the target language as his primary concern, and uses intertextual commentary, definition, or exposition of the cultural context in the target language, to convey the meaning of the source text and to render it as useful as possible, this translation is 'reader-oriented'. The latter description applies to the translation activities at Baghdad by the mid-ninth century, when translators and scholars, such as Ḥunayn and al-Kindī, approached the Greek corpus with a robust confidence and, although accuracy was their aim, their own research agendas took precedence over strict one-to-one translation. Ḥunayn's translations certainly fit the latter category, since he occasionally 'corrected' his originals, whether Greek or Syriac, and his pervasive textual 'intrusions' can be construed as aids for the reader.¹² A similar attitude was manifested by al-Kindī, who confidently reconfigured the Greek sciences, according to his own needs, without regard for ancient disciplinary boundaries. Indeed, his efforts have been described as 're-inventing' ancient philosophy, which had fallen into oblivion.¹³

10 Ḥunayn ibn Ishāq, *Risālah (Epistle)*, ed. Bergsträsser (1925) 15.9 = ed. Lamoreaux (2016) 32–3. Discussed in Overwien (2012: 152).

11 Brock (1983).

12 Cf. Overwien (2012: 169). Overwien (2012: 155) eloquently states: 'The text of the Greek original was not sacrosanct to Ḥunayn'.

13 Gutas (2010: 21–2; 2004: 195).

Ḥunayn's transformations are determined by comparing the translations with originals, philologically, i.e. in the process of determining which differences between the texts might represent true variant readings, and which are most likely an intentional elaboration or clarification of Ḥunayn's. Here, several common types of textual or conceptual transformations that Ḥunayn (and other translators) routinely employed are sketched schematically.¹⁴ The illustrative examples are drawn mainly from Galen's *On Crises* and *On Critical Days*, but they seem to be typical of Ḥunayn's other Galen translations.¹⁵ This scheme is discussed in much greater detail and with more examples elsewhere.¹⁶ They include: expansions, insertion of context and explanations, defining terms, deliberate mistranslation, and creating semantic shifts that open new directions for thought.

4 Expansions

One simple sort of expansion, pervasive throughout Ḥunayn's translations, is his use of two Arabic words (usually adjectives) to capture the meaning of a single Greek term, which I call *hendiadys* ('one via two').¹⁷ This approach is reader-oriented, since it prioritises the readers' understanding, rather than strict faithfulness to the original. On rare occasions, Ḥunayn employs three Arabic words. The effect is like triangulating onto the desired meaning, as with a Venn diagram, where each circle represents the semantic field of a translated word, and the desired meaning is the space where the circles intersect.¹⁸ In one case, hendiadys precisely captures the senses of the Greek original. This is found in the *On Critical Days* translation where Ḥunayn renders Greek *kalos*,¹⁹ which has senses both of 'good' and 'beautiful',²⁰ by *ḥasan ḡamīl* ('good and beautiful').²¹ Sometimes the hendiadys involves verb clauses, such

14 My independently derived scheme resembles generally those derived by other scholars; see Overwien (2012: 154–5) and Vagelpohl (2010b: 168–84).

15 Ḥunayn translated both of these treatises for Muḥammad ibn Mūsā, mentioned earlier. Ḥunayn, *Risāla*, ed. Bergsträsser (1925) 16.4–12 = Lamoreaux (2016) 32–5.

16 Cooper (2016: 1–43).

17 Cooper (2011: 85–6). Vivian Nutton calls them 'doubles': (1989: 379–80). Peter Pormann provides a few examples from the Arabic translation of Paul of Aegina, generally assumed to have been by Ḥunayn or his school: (2004: 249).

18 Venn (1880: 47–59).

19 Galen, *Dec.*, 2.2, ed. Kühn (1825) 1X.844.12.

20 Liddell, Scott, and Jones (1996: 870). This word means both 'beautiful' and 'good' in the sense of 'noble, upright, honorable'.

21 Galen, *Dec. vers. arab.*, 2, ed. Cooper (2011) 232.9 [= ed. Kühn (1825) 1X.844.12].

as *On Critical Days*, where *tetagmenas* ('are well-ordered') referring to the natural periods and phases of change in living things,²² which Ḥunayn renders as a two-part phrase *lāzima li-ṭarīqin wāḥidin wa-niẓāmin wāḥidin* ('adhere to one path and to one system').²³ While some might see this as distorting the original text – such was the view of the Renaissance physician Niccolò Leonicensio (1428–1524), who sought to purge the medical tradition of corrupting Arab embellishments – these additions and textual 'intrusions' actually made the text more useful.²⁴

5 Adding Context or Explanation

Often the expansion attempts to provide the cultural context for a concept, which a one-to-one translation could not convey. An extreme example of this kind of insertion is found in Ḥunayn's Syriac translation of Galen's *On Medical Names*, where he notes that the Greek manuscript from which he prepared his Syriac translation had so many errors that he had to correct them on the basis of his knowledge of Galen's style and other works.²⁵ A few selected passages reveal Ḥunayn's familiarity with Greek culture, as well as with Galen's whole corpus. For example, in *On Critical Days*,²⁶ when Galen describes how a physician's mistake can cause crises to occur earlier or later than their expected times, which is dangerous, since the patient will either be unprepared to face the trauma of a crisis, or the diseased humours will remain in him too long, causing further damage to his body, Ḥunayn adds: 'and knowledge of this is derived from the *Therapeutic Method*'.²⁷ In that treatise, Galen explains how to adjust a prognosis when a mistake has been made.²⁸ Ḥunayn also adds in *On Critical Days*,²⁹ 'and knowledge of (how to adjust the prognosis) is found in the *On Crises*'.³⁰

22 Galen, *Dec.*, 2.2, ed. Kühn (1825) IX.843.17.

23 Galen, *Dec. vers. arab.*, 2, ed. Cooper (2011) 232.2 [= ed. Kühn (1825) IX.843.17].

24 Cooper (2012: 604–6).

25 Overwien (2012: 154, n.21), where Galen, *Med. Nom. vers. arab.*, is quoted and translated, from Meyerhof and Schacht (1931) 17.30–18.4.

26 Galen, *Dec.*, 1.11, ed. Kühn (1825) IX.827.9.

27 Galen, *Dec. vers. arab.*, 1, ed. Cooper (2011) 201.9–10 [= ed. Kühn (1825) IX.827.9]: *Wa-ma'rifatu dālīka tu'ḥaḍu min kitābi ḥilati l-bur'i*.

28 Galen, *MM*, 10.6, ed. Kühn (1825) x.693.16ff.

29 Galen, *Dec.*, 1.11, ed. Kühn (1825) IX.828.1.

30 Galen, *Dec. vers. arab.*, 1, ed. Cooper (2011) 203.1 [= ed. Kühn (1825) IX.828.1]: *Wa-ma'rifatuhu fī kitābi l-buḥrāni*.

Sometimes Ḥunayn adds an explanation, based on his mastery of Galenic medical theory, such as in *On Critical Days*,³¹ when Galen is describing the symptoms that must occur in order to prevent the illness from returning, Ḥunayn adds: ‘so that when you see that the illness has abated without one of these two things occurring before it subsides’,³² i.e. you may be sure that the illness will return, since the patient has not experienced a full recovery. This addition is consistent with Galenic crisis theory, and the physician is enjoined to watch for these crucial signs.

In another example, Ḥunayn displays his knowledge of Graeco-Roman culture. In *On Critical Days*,³³ Galen compares the physician’s prognosis with the prophecies of state diviners in order to show that medical prognosis is superior to divination. Ḥunayn renders the Greek *hoi hieroskopoi* (‘the holy/priestly lookers’), which by itself offers little clue as to its meaning, with ‘those who examine blood sacrifices’, referring to the Roman practice of entrail divination (extispicy).³⁴

6 Define a Term or Transliterate It?

Ḥunayn sometimes uses a transliteration of a Greek, Persian or Syriac word in place of, or in addition to, a translation, which suggests that the term was familiar to his readers and did not require a translation or explanation. For example, the Syriac word for ‘crisis’, *buḥrān*, long established in Syriac medical usage, is transliterated.³⁵ Sometimes Ḥunayn translates a concept into Arabic, and then adds, ‘which the Greeks call’, or ‘which in Syriac is’, and occasionally adds a Persian equivalent. Many such passages of the *On Crises* concern the colours or other features of the bodily fluids and symptoms associated with classifying crises, and because the physician must be as accurate as possible in this, Ḥunayn wanted to convey as much detail as possible.

31 Galen, *Dec.*, 1.1, ed. Kühn (1825) IX.769.6.

32 Galen, *Dec. vers. arab.*, 1, ed. Cooper (2011) 97.4–5 [= ed. Kühn (1825) IX.769.6]: *fa-idā anta raʾayta l-maraḍa qad sakana min ǧayri an yakūna qabla sukūnihi aḥadu ḥādayni š-šayʾayni*.

33 Galen, *Dec.*, 1.12, ed. Kühn (1825) IX.833.6.

34 Galen, *Dec. vers. arab.*, 1, ed. Cooper (2011) 213.4–5 [= ed. Kühn (1825) IX.833.6]: *li-lladīna yanẓurūna fi d-dabāʾiḥi*. See, e.g., Collins (2008: 319–45).

35 Note that the titles of these treatises in Arabic are *Kitāb al-Buḥrān* (*On Crises*), and *Kitāb Ayyām al-buḥrān* (*On Critical Days*). On the reception of Galen in the Syriac tradition, see Bhayro (Chapter 8) in this volume.

In a passage from the *On Crises* where Galen discusses phrenitis, lethargy, pneumonia, and pleurisy, Ḥunayn provides expanded translations with definitions, and then adds the Greek transliterations (*farānītis*, *litārgūs*, *bārbaflūmūniyā*, *balūrītis*).³⁶ The third item is a transliteration of a synonym, *peripleumonia*, for the *peripneumonia* that appears in all extant Greek manuscripts. Both forms are frequently attested and are said to be synonyms.³⁷ It is possible that a scribe (or Ḥunayn) confused the Greek letters nu and lambda here, which are hard to distinguish in miniscule, and Ḥunayn's Greek manuscript had lambda instead of nu. In the case of phrenitis, Ḥunayn included the Persian equivalent (*birsām*). There was confusion between *sirsām* (from Persian *sar-sām*: 'head pain') and *birsām* (from Persian *bar-sām* 'chest pain'). According to Michael Dols, this happened both because the translators failed to provide an unambiguous term for phrenitis, and because Galen's writings do not always clearly distinguish between pleurisy and phrenitis.³⁸ Phrenitis was initially transliterated into Arabic as *farānītis*, as in the present context, but was soon read as *qarānītis*, as it appears in the writings of Muḥammad ibn Zakarīyā' al-Rāzī (d. 925) and Ibn Sīnā (d. 1037), for example, because the initial *fā'* of the former was confused for a *qāf'* (there is one dot distinguishing them).

Ḥunayn occasionally shows knowledge of Greek philosophy as it relates to medicine, which is essential for translating Galen, who frequently employs philosophical terminology. In the case of the sorites (*sōritēs*) or 'fallacy of the heap', Ḥunayn helps the reader understand this concept. The sorites is one of the paradoxes devised by the logician Eubulides of Miletus (fl. fourth century BC), in order to expose the limits of language and logic.³⁹ A sorites argument involves quantity words, such as 'heap', and asks how many grains of wheat would be enough to qualify as a 'heap'. One grain certainly does not, nor does a hundred. Precisely how many grains constitute a heap rather than a pile of grains? Certain scholars have argued that some elements of Aristotelian logic had entered Arabic, via contact with Syriac intellectual communities, before Aristotle's works were translated into Arabic in the ninth century.⁴⁰ Perhaps because of Ḥunayn's familiarity with the Syriac intellectual tradition, or due to the fact that some Aristotelian material was translated by his school, he was familiar not only with the *Organon*, but also with the commentary tradition, where the sorites was likely discussed.

36 Galen, *Cris.*, 3.3, ed. Kühn (1825) IX.707.8–14 = ed. Alexanderson (1967) 170.7–12.

37 Liddell, Scott, and Jones (1996: 1383).

38 Dols (1992: 57–8); Cooper (2016: 13–16).

39 See Moline (1969: 393–407). The sorites continues to be of interest to modern philosophers, e.g. Graff (2001: 905–35).

40 Vagelpohl (2010a: 134–58). See also Lameer (1996: 90–8); King (2011: 225–38).

In two passages from the *On Critical Days* considered presently, Galen is determining a canonical list of days that can be considered to be ‘critical’, namely, those days on which crises have been observed most often. He asks: How many crises must be observed in a day for it to qualify as a critical day? Galen claims that one can use reason, in the form of a sound theoretical explanation of what causes crises, along with a set of observations (many but not thousands), to conclude that a particular day is critical or not. In general terms, Galen’s argument is about philosophy of science: How many positive instances or correlations of phenomena are sufficient to conclude that some natural law governs those phenomena?

Consider the following two passages from the *On Critical Days*.

Greek:

Dēlon hōs eis sōritikēn aporian empiptei to sympan.

It is clear that the whole (argument) falls into the fallacy of the heap.⁴¹

Arabic:

fa-innahu yaqa‘u fī amri ayyāmi l-buḥrāni ‘awīṣu l-masā‘ili llatī ta‘raḍu fī ḡamī‘i l-aṣyā‘i llatī tatazayyadu aw tatanaqqasu qalīlan qalīlan

Consequently, in the subject of the critical days an impasse is reached in questioning that pertains to everything that increases or decreases little by little.⁴²

The second passage:

Greek:

Chrē de eidenai katholou peri tōn toioutōn hapantōn hōs hosa posou tinos eis moria diairoumenou ginetai, echei tēn sōritikēn aporian hepomenēn.

And one must know in general about everything of this sort, that as many things that arise, when a certain magnitude is divided into parts, have the impasse of the sorites that follows as a consequence.⁴³

41 Galen, *Dec.*, 1.3, ed. Kühn (1825) IX.780.2.

42 Galen, *Dec. vers. arab.*, 1, ed. Cooper (2011) 117.1–2 [= ed. Kühn (1825) IX.780.2].

43 Galen, *Dec.*, 2.13, ed. Kühn (1825) IX.895.1–3.

Arabic:

*wa-bi-l-ğumlatin fa-yanbağī an ta'lama anna kulla mā yakūnu yuqṣamuhu
šay'in yansubu ilā l-kamiyyati ilā mā fihi mina l-ağzā'i fa-qad yaqa'u fihi
l-'awīṣu l-lāzimu min qibali n-nuqṣāni wa-z-zīyādati qalīlan qalīlan*

In general, you must know that in the case of everything in which something connected with magnitude divides into the parts of which it is comprised, there will occur in it an unavoidable impasse due to the diminishing or increasing gradually.⁴⁴

It is noteworthy that Ḥunayn does not use the usual Arabic term *sabīb* 'heap', but renders *sōritikē aporia* ('sorites impasse') with a defining expansion that helps the reader understand: *ğamī' l-ašyā' llatī tatazayyadu aw tatanaqqasu qalīlan qalīlan* ('everything that increases or decreases little by little'). In the Arabic translation of Galen's *On Medical Experience*, Ḥunayn's nephew, Ḥubayš, rendered *sorites* as *sabībī* ('pertaining to heaps'), and explained that it is 'the argument that proceeds little by little' (*al-qawlu llaḍī yakūnu qalīlan ba'da qalīlin*).⁴⁵ Ḥunayn's expanded rendering of the sorites concept resembles another synonymous Greek expression for the sorites, 'the argument by increments' (*ho para mikron logos*).⁴⁶

7 Deliberate (Mis)translation

Occasionally, Ḥunayn renders a name or a concept in a surprising way, which even seems to be mistaken. One striking example is found in the *On Critical Days*, where Ḥunayn renders the god Zeus as Asklepios. However, what appears on the surface to have been a mistake, on closer inspection is a more appropriate choice, and one with Ḥunayn's readers in mind.

Greek:

*Alla tēn men toutōn amathian te kai philoneikian oud' an autos ho Zeus
exiasaito, kai moi kai tauta pleiō tou deontos eirētai pros autous.*

44 Galen, *Dec. vers. arab*, 2, ed. Cooper (2011) 313.1–2 [= ed. Kühn (1825) IX.895.1–3].

45 Galen, *Med. Exp. vers. arab.*, 16, ed. Walzer (1944) 38.5–6; tr. Walzer (1944: 115).

46 Barnes (1982: 24–68).

But not even Zeus himself would heal their ignorance and belligerence, and these things have been said to them by me, more than was necessary.⁴⁷

Arabic:

illā anna bi-aṣḥābi hādīhi l-ḥuṣūmati mina l-mukābarati wa-l-ḡahli mā lā aḥsubu anna Asqlībīyūsa kāna yaqdaru an yaṣfihim minhu wa-anā aʿaddu li-dālika hādā l-qawli minnī id qaṣadtuhum bihi faḍlan ʿammā yanbaḡī

Nevertheless, the partisans of this argument are so stubborn and ignorant that I think not even Asklepios can cure them of it. It was for this purpose, moreover, that I prepared this statement of mine, since I directed it at them, more than was required.⁴⁸

Galen knew Asklepios well, referring to the deity often in his writings, including reports of divine dreams sent by the god instructing him how to heal himself.⁴⁹ However, as I have argued elsewhere, this treatise is directed to a popular, Stoic-oriented audience, for whom Zeus was the rational power that holds the cosmos together. For example, Galen quotes from the *Phaenomena* of the popular Stoic poet, Aratus, in support of the predictive power of the critical days, since Zeus is the source of all natural signs.⁵⁰

Then why did Ḥunayn change Zeus to Asklepios? Gotthard Strohmaier's discussion of the Arabic translation of the Hippocratic *Oath* gives a clue. The Arabic translation of the Hippocratic *Oath* omits all deities – Apollo, Hygieia, Panaceia, and 'all the gods and goddesses', present in the Greek version of the *Oath* – (replacing them with 'all God's saints, both male and female' *bi-awliyā'i llāhi mina r-riḡālī wa-n-nisā'i ḡamīʿan*) except for Asklepios. The Arabic translation of the *Oath* reads: 'I swear by God, Master of life and death, giver of health and creator of healing and every cure, and I swear by Asclepius, and I swear by all God's saints, male and female, and I call on all of them as witnesses that I will fulfill this oath and this condition'.⁵¹ As a lesser pagan

47 Galen, *Dec.*, 1.1, ed. Kühn (1825) IX.773.16–774.2.

48 Galen, *Dec. vers. arab.*, 1, ed. Cooper (2011) 105.1–2 [= ed. Kühn (1825) IX.773.16–774.2].

49 On Asklepios in general, see Nutton (2013: 104–5, 109–10, 162–3). Pergamum also had the famous Asklepieion healing temple. On Galen's healing dreams, see Galen, *Cur. Rat. Ven. Sect.*, 23, ed. Kühn (1826) XI.314–5. For other experiences with Asklepios, see Galen, *Lib. Prop.*, 2, ed. Kühn (1830) XIX.18–19 = ed. Boudon-Millot (2007) 141–3; and Galen, *UP*, 10.12, ed. Kühn (1822) III.812–14 = ed. Helmreich (1909) II.92–4. See also Mattern (2013: 38).

50 See Cooper (2011: 8, 62, 69–71) and the references there. Aratus: *Phaenomena*, 72–3, ed. Kidd (1997) 72, and commentary by Kidd (1997: 161–7).

51 Translation from: Rosenthal (1975: 183–4). Arabic text excerpted from Ibn Abī Uṣaybiʿah, *Sources of Information on the Classes of Physicians* (*ʿUyūn al-anbāʾ fi ṭabaqāt al-aṭibbāʾ*), 1.4,

deity than Apollo, Asklepios was less threatening to Muslims in the *Oath* context, and in the present context, than Zeus, and in addition, is more appropriate as a healing deity.⁵² So, Ḥunayn's mistranslation has his Muslim readers and their preference clearly in mind, without distorting the passage too much.

8 Semantic Overlap and Shifting

Semantic shifting is unavoidable in translation, since rarely is there a word in the target language that perfectly corresponds semantically to its source word. For purposes of the transmission of ideas, the most interesting cases are where the target expression adds senses not present in the source, or suppresses those senses. Here an especially rich case that connects with other significant Arabic terms is considered.

In his translations of Galen's treatises on crisis theory, Ḥunayn usually renders *stochazomai* ('to conjecture') with *ḥadasa*, which in modern Arabic has a similar meaning.⁵³ However, both of these terms have semantic associations with archery in their respective languages: *stochazomai* is from *stochos* ('target'), and the primary sense of *ḥadasa* is 'to throw, hurl, or shoot (an arrow)'. The meaning 'to conjecture' is thus a metaphorical extension of this primary sense in both cases: to conjecture about something is like shooting at a dimly seen or unseen target, hoping to hit it. Moreover, the English word 'conjecture' derives from a Latin term (*coniectura*) that itself has the same primary sense

ed. Müller (1882) 1.25.18–20: *aqsimu bi-llāhi rabbi l-ḥayāti wa-l-mawti wa-wāhibi ṣ-ṣiḥḥati wa-ḥālīqi ṣ-ṣiḥḥi wa-kulli 'ilāḡ wa-aqsimu bi-asqlībiyūsa wa-aqsimu bi-awliyā'i llāhi minā r-riḡālī wa-n-nisā'i ḡamī'an wa-aṣḥaduhum ḡamī'an 'alā annī afi bi-ḥāḏīhi al-yamīni wa-ḥādā ṣ-ṣartī*. The classic article on the *Oath* is Edelstein (1967: 1–63, Greek text on 5).

52 Strohmaier (1974: 321).

53 E.g. *Dec.*, 2.11, ed. Kühn (1825) IX.885.9–10. Representative examples from the *On Crises*: 1.2, ed. Kühn (1825) IX.552.7 = ed. Alexanderson (1967) 70.1; 1.5, ed. Kühn (1825) IX.562.9 = ed. Alexanderson (1967) 76.14; 1.9, ed. Kühn (1825) IX.582.16 = ed. Alexanderson (1967) 90.4; 1.9, ed. Kühn (1825) IX.583.3 = ed. Alexanderson (1967) 90.9; 1.17, ed. Kühn (1825) IX.624.8 = ed. Alexanderson (1967) 115.20. But Ḥunayn does not *always* render it this way; see Cooper (2016: 27–31) for a cautionary discussion. Conjecture is discussed more frequently in the *On Crises* than in the *On Critical Days* because there Galen is showing how to infer the existence and nature of crises from symptoms and bodily fluids. The edition of the Arabic translation of the *On Crises* is in preparation by the present author, and will include a full Greek-Arabic glossary.

of 'to hurl (a projectile)'.⁵⁴ *Ḥads* (the verbal noun form of *ḥadasa*) had a long history in later Arabic philosophy, where its meaning wandered far from the original sense, coming to mean 'intuition' in Ibn Sīnā's philosophy.⁵⁵

The physician 'Abd al-Laṭīf al-Baġdādī (1162–1232) took up the archery analogy in medicine in his *Book of the Two Pieces of Advice*,⁵⁶ where he likened the skilled physician to an archer who, if he is aiming at the target, will hit it most of the time, but if he is pointing the bow in the wrong direction will never hit anything. Because medicine is an empirical and conjectural science, physicians cannot reasonably be expected to be right all of the time. Al-Baġdādī is continuing an association of archery with medicine that began with Galen, who compared the process of learning medicine to learning archery. Galen stressed that the student should not give up, in spite of missing the target many times as he practices.⁵⁷

The archery metaphor is also included in the word Ḥunayn chose to render *plēmmeleō*, whose surface meaning is 'to make a mistake', but whose literal meaning is 'to play a wrong note'.⁵⁸ That word is *aḥṭa'a*, which has the primary sense of missing a target. Galen might have used *hamartanō* or *sphallomai* instead of *plēmmeleō*, since either of these seems to be a more straightforward expression of making an error than *plēmmeleō*. However, Galen was reinforcing his philosophy that making an error in treating a patient was more disruptive of a harmonious relationship between natural and human factors than merely 'missing the mark'. Galen may have had Plato's usage of *plēmmeleō* in mind, for example, where Plato chastised the skilled craftsmen (*hoi cheiro-technai*) for claiming knowledge outside their fields of expertise.⁵⁹ Ḥunayn,

54 From *coniecto*, literally, 'to hurl (together)'. However, it already had the metaphorical sense of inference, guesswork, and even to interpret dreams, in classical Latin; see Glare (1996: 407).

55 For a lengthy discussion of this tradition, see: Davidson (1992: 166–86); Gutas (2014: 179–201).

56 The passage in question is: 'Abd al-Laṭīf ibn Yūsuf al-Baġdādī, *The Book of the Two Pieces of Advice* (*Kitāb al-Naṣīḥatayn*), Bursa: MS Hüseyin Çelebi 823, item no. 5; medical section on fols 62a–78a; philosophical section: fols 78b–100b. Discussed in Joosse and Pormann (2008: 425–7).

57 Galen, *Cris.*, 2.2, ed. Kühn (1825) IX.644.15–645.5 = ed. Alexanderson (1967) 128.23–129.7.

58 Representative examples from the *On Critical Days*: ed. Cooper (2011) 133.11 [= 1.4, ed. Kühn (1825) IX.789.8]; ed. Cooper (2011) 197.12 [= 1.11, ed. Kühn (1825) IX.825.6]; ed. Cooper (2011) 199.9 [= 1.11, ed. Kühn (1825) IX 826.6]; ed. Cooper (2011) 201.8 [= 1.11, ed. Kühn (1825) IX.827.5]. But Ḥunayn does not consistently render it this way. See Cooper (2016: 31–33) for a cautionary discussion.

59 Plato, *Apology*, 21e–22e.

however, intended for his translation to pivot conceptually on these two archery words: one for shooting at a target (*ḥadasa*), and the other for missing it (*aḥṭa'a*). Therefore, Ḥunayn has given his translation a conceptual coherence that is not found in the Greek. Thus, *aḥṭa'a* would correspond more closely with Greek *hamartanō* (and indeed, some translators render this word with *aḥṭa'a*) than *plēmmeleō*, and by choosing *aḥṭa'a*, Ḥunayn has actually continued the conceptual metaphor to which *ḥadasa* also belonged, linking these words in Arabic in a way that they are not connected in Greek.

Galen's unusual word choice for 'to make a mistake', *plēmmeleō*, presents an example of a significant sense in the original being suppressed in the translation. The musical connections of *plēmmeleō* within the greater context of Galen's medical cosmology is appropriate, because the very possibility of prognosis depends on the properly functioning harmonic relationship between physician, nature, and patient, and a mistake frustrates nature's efforts on behalf of the patient. By Ḥunayn's consistently rendering *plēmmeleō* as *aḥṭa'a* ('to miss the target'), this cosmic-harmonic imagery is lost, however, rich new associations are created by the image of an arrow missing a target, which links to other pivotal concepts.

9 Conclusion

'Traduttore traditore': 'The translator is a traitor'. While some may understand Ḥunayn's translation style to distort the Greek Galen, if we understand his efforts to have been 'reader-oriented', then they appear to be ingenious elaborations on their originals. As I have endeavoured to show, the Arabic Galen was a creative reading, an expansion on the Greek texts, with the primary aim of utility for research and medical practice, with the readers' needs at the forefront. Given that the Arabic Galen is the form in which Galen's writings first entered the West, the question of how it was formed and constructively transformed medicine has important implications for at least two civilisations.

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From Commentary to Polemic: the Reception of Galen by Abū Bakr al-Rāzī

Pauline Koetschet

By the end of the ninth century, almost the entire Galenic corpus had become available in high-quality Arabic translations produced by Ḥunayn ibn Ishāq and his circle.^{1,2} Ḥunayn himself had also started producing abridgements and systematic textbooks based on Galen's works. Galen enjoyed an impressive afterlife in the Arabo-Islamic world, mainly as a physician of course, but also as a philosopher even though his contributions to philosophy were a source of debate.

One on the physicians who engaged the most with Galen's legacy was Abū Bakr Muḥammad ibn Zakarīyā' al-Rāzī. Al-Rāzī was born in Rayy, near present-day Tehran, in the second half of the ninth century and died around 925. He studied philosophy, literature, and music in his youth before turning to the study of medicine. He would go on to serve as a director in hospitals in Rayy and Baghdad. Al-Rāzī was one of the most innovative clinicians of the Arabo-Islamic Middle Ages as well as an alchemist and a philosopher. Among his most important medical works is *The Comprehensive Book on Medicine* (*al-Kitāb al-Ḥāwī fī al-ṭibb*), a multi-volume Arabic-language encyclopaedia consisting of a collection of lecture notes gathered and arranged by al-Rāzī's students after his death.³ He is also the author of the *Book to al-Manṣūr* (*al-Kitāb al-Manṣūrī*), a medical encyclopaedia dedicated in 903 to al-Manṣūr, Rayy's governor that significantly influenced the Islamic scholarly tradition.⁴

Historians of medicine have rightly stressed the clinical aspects of al-Rāzī's medical writings.⁵ In the introduction to his treatise *On the Hidden Properties of Substances* (*Kitāb al-Ḥawāṣṣ*), al-Rāzī insists that only experience can fill the gap left by the shortcomings of theoretical knowledge. He is the author of the *Book of Experiences*, a collection of more than 900 examples of his therapeutic

1 All translations are my own, unless otherwise stated.

2 See Cooper (Chapter 9) in this volume; see also Strohmaier (1981: 187–8).

3 On *The Comprehensive Book on Medicine* (*al-Kitāb al-Ḥāwī fī al-ṭibb*), see Savage-Smith (2012: 163–80).

4 For a more general presentation of al-Rāzī's life and writings, see Goodman (2012: 490–3).

5 See for example Iskandar (1962: 217–82); Pormann (2013: 207–53).

practices. This collection of case reports, collected posthumously by his students, shows that al-Rāzī believed in the importance of studying illnesses analytically in order to understand signs, symptoms, critical days, and so on.

Al-Rāzī developed an optimistic theory of scientific progress according to which sciences are continuously improved and previous mistakes corrected. This theory combines a thorough knowledge of ancient sources with a firm rejection of blind acceptance based on the authority of their proponents. Among these sources, Galen was obviously the author who enjoyed the most authority. Al-Rāzī displays a thorough knowledge of Galen's writings in all of his works. Manfred Ullmann and Fuat Sezgin both sketched the extent to which al-Rāzī refers to Galen's texts.⁶ In the few cases in which both the Greek original and the Arabic version of a Galenic treatise have been lost, al-Rāzī is often one of the main sources for the reconstruction of the treatise. For example, he is the main source for the Arabic fragments of Galen's treatise *On Demonstration*, which is lost both in Greek and in Arabic and is presumably one of the treatises in which Galen's engagement with logic and philosophy is central to the text.⁷ It consisted of fifteen books that examined theories of logic as well as various topics unrelated to logic, such as the creation of the world, time, and vision.⁸ In addition to his importance in providing access to Galen's lost works, al-Rāzī constantly reflected on Galenic input and also extensively challenged it. He is, as far as is known, the only Islamic physician who dared to devote a polemical treatise, *Doubts About Galen* (*Kitāb al-Šukūk 'alā Ġālīnūs*), to criticising the master. In the introduction, al-Rāzī presents a dynamic view of scientific progress, asserting, 'Ancients are like those who have [themselves] acquired property on the one hand, and their successors are like heirs, for whom inheritance makes it easier to earn more and more, on the other hand'.⁹

Managing the prolific Galenic corpus is no small task. The first part of this contribution examines how al-Rāzī worked with the Galenic sources in various treatises. Studying how al-Rāzī used the Galenic sources shows that Galen's legacy was both medical and philosophical in al-Rāzī's writings. The treatise in

6 Ullmann (1970: 128–36); Sezgin (1970: 274–94).

7 Strohmaier (1998: 267–9). Ḥunayn was well aware of the importance of this treatise and travelled so far as Alexandria to procure a good copy of it.

8 On the Greek testimonies and fragments, see von Müller (1895: 403–78). For an attempt to reconstruct the general structure of the treatise, see Chiaradonna (2009: 43–77) and (2014: 61–8), as well as Havrda (2015: 265–87). On the Arabic fragments, see Strohmaier (1998: 263–97) and Koetschet (2015b: 167–98).

9 Abū Bakr al-Rāzī, *Doubts About Galen* (*Kitāb al-Šukūk 'alā Ġālīnūs*), ed. M. Muḥaqqiq (199–3) 3.67. Al-Rāzī's theory of scientific progress displays strong parallels with Galen's own epistemological optimism, on which see Hankinson (1994: 1775–89). I would like to thank Aileen Das for having called this article to my attention.

which he engages the most freely with Galen's multi-layered legacy is *Doubts About Galen*, on which the second part of this chapter focuses. The third part argues that in his interpretation of Galen, al-Rāzī found the starting point for his contributions to debates of relevance among his contemporaries. The last part looks at the aftermath of al-Rāzī's reception of Galen.

1 Embracing the Galenic Corpus

In his writings, al-Rāzī does not treat the Galenic corpus as a comprehensive source of knowledge that should be transmitted with as little interference as possible, but as a reference to build on and modify. Even in what is arguably the least personal of al-Rāzī's treatises, *The Comprehensive Book on Medicine*, Galen's texts are edited to reflect al-Rāzī's interpretation of the subject matter. As noted, the treatise is a collection of Rāzī's notes assembled and published after his death by his students. It comprises passages from dozens of authorities, punctuated by remarks from al-Rāzī. As such, it reflects the extent to which al-Rāzī relied upon and referred to Galen's teachings. As Ivan Garofalo put it, al-Rāzī's treatise is a 'treasure of excerpts for the Arabic Galen'.¹⁰ Previous studies have shown that the correspondence between passages from *The Comprehensive Book* and the Greek sources is frequently loose.¹¹ Most of the time, al-Rāzī paraphrases his sources, and he often reorganises and reinterprets them. Jennifer Bryson divided the citations that she identified into six categories, going from roughly literal quotations to 'dove-tail citations'.¹² Ursula Weisser and Aileen Das came to similar conclusions in examining quotations from Galen's *Therapeutic Method* and *Commentary on Plato's 'Timaeus'* in *The Comprehensive Book on Medicine*.¹³

In addition to rewriting sources, al-Rāzī includes personal remarks. A good example can be seen in the chapter on melancholy. Of the many Greek treatises that dealt with melancholy and were translated into Arabic, the two texts that had the greatest influence on Arab physicians were Rufus of Ephesus' lost treatise *On Melancholy* and the third book of Galen's *On Affected Parts*, in which Galen distinguishes between three types of melancholy: melancholy that originates in the brain, melancholy that originates in the stomach, and

¹⁰ Garofalo (2011: 379).

¹¹ See, for example, Weisser (1991: 134–5); Bryson (2000: 19–73); Garofalo (2002: 383–406).

¹² See Bryson (2000: 21). She devoted her thesis to the first chapter of book one.

¹³ See Weisser (1991: 133–7); and Das (2013: 99).

melancholy present in the entire body.¹⁴ Galen connects melancholy to other psychosomatic illnesses, such as epilepsy and phrenetic delirium.¹⁵ Contrary to Galen, al-Rāzī argues in favour of a much more limited conception of melancholy that does not include other kinds of mental illnesses.¹⁶

Al-Rāzī, in addition to making broad modifications of the definition of disease, offers more limited remarks on Galen's claims. For example, in the third book of *On Affected Parts*, Galen quotes Diocles' exposition of hypochondriac melancholy.¹⁷ According to Diocles, inflammation in the blood vessels that receive food from the stomach, namely, the mesaraic veins, is indicated by several symptoms, such as food remaining untreated in the stomach, vomiting, and sour belching and watery spitting. Drawing on Diocles, Galen considers that melancholy arising from the stomach is indeed caused by a 'kind of inflammation present in the stomach'.¹⁸ Right after paraphrasing this passage in *The Comprehensive Book*, al-Rāzī adds a remark introduced by 'me' (*lī*), asserting that such phenomena do not indicate that there is an inflammation in the region of the stomach. The reason is that if such an inflammation occurred, it would necessarily provoke a fever, whereas melancholy is a disease that does not induce fever. Al-Rāzī adds that it is more likely that hypochondriac melancholy is caused by an accumulation of black bile in the spleen.

Galen had mentioned the role of the spleen in relation to melancholy in the fifth book of *On Affected Parts*, in which he says that most melancholic patients suffer from pain in the region of their spleen.¹⁹ This remark is disjoined from the theory of melancholy expounded in the third book of *On Affected Parts*. Al-Rāzī builds on this theory, considering the spleen the most important organ in the aetiology of melancholy. This point is of some importance in al-Rāzī's understanding of melancholy, since according to him, melancholy can only arise from an excess of black bile, which is a cold and dry humour incompatible with any inflammation. In *Doubts About Galen*, al-Rāzī refers critically to this passage in *On Affected Parts*.²⁰

In addition to drawing on the anthology of Galenic sources found in *The Comprehensive Book on Medicine*, al-Rāzī examined the high-quality

14 Galen, *Loc. Aff.*, 3.9, ed. Kühn (1824) VIII.177–9.

15 Galen, *Loc. Aff.*, 3.9–10, ed. Kühn (1824) VIII.176–93.

16 On this restriction, see Koetschet (2015a: 225–31).

17 Galen, *Loc. Aff.*, 3.10, ed. Kühn (1824) VIII.186–9.

18 Galen, *Loc. Aff.*, 3.10, Kühn (1824) VIII.188–9. For the edition of the Arabic translation of this passage, see van der Eijk and Pormann (2008: 282).

19 Galen, *Loc. Aff.*, 5.6, ed. Kühn (1824) VIII.342.

20 Abū Bakr al-Rāzī, *Doubts About Galen* (*Kitāb al-Šukūk ‘alā Ġālīnūs*), ed. Muḥaqqiq (1993) 57–8.

translations produced by Ḥunayn and his team to produce exegeses of several of Galen's writings. The eleventh-century scholar al-Bīrūnī (d. 1048 or 1052), primarily known for the *Book on India* (*Kitāb al-Hind*), wrote *Epistle on the Writings by Abū Bakr al-Rāzī*, which is considered the most reliable list of al-Rāzī's writings. Al-Bīrūnī quotes the titles of four abridgements: *Abridgement of the Long Treatise 'On Pulse'* (*Iḥtiṣār kitāb al-nabḍ al-kabīr*), *Abridgement of the Treatise 'Therapeutic Method'* (*Talḥīṣuhu li-ḥīlat al-bur*), *Abridgement of the Treatise 'On Diseases and Symptoms'* (*Talḥīṣuhu li-al-'ilal wa al-a'rād*), and *Abridgement of the Treatise 'On Affected Parts'* (*Talḥīṣuhu li-al-a'dā' al-'ālīma*).²¹ The *Abridgement of the Long Treatise 'On Pulse'* is preserved in MS Tehran, Maḡlis 6808.²² The *Abridgement of the Treatise 'Therapeutic Method'* is preserved in a single manuscript held at the Escorial Library, under the shelf mark Ms ar. 801/1. *Abridgement of the Treatise 'On Diseases and Symptoms'* and *Abridgment of the Treatise 'On Affected Parts'* are unfortunately lost. Al-Bīrūnī calls these expositions *iḥtiṣār* and *talḥīṣ*, which can signify distinct types of commentaries but are often used interchangeably. In the context of logical literature, *iḥtiṣār* describes a 'condensation which follows for the most part the wording of the original', and *talḥīṣ* is a summary that either 'presents something precisely' or 'presents the essential points of a book'.²³

As *Abridgement of the Treatise 'Therapeutic Method'* is the only extant summary, the focus here is on it and trying to understand al-Rāzī's goal in composing this work. It consists of 74 folios and has, until now, been neglected by specialists in spite of its importance to Galenic studies as well as the history of Arab philosophy and science. One can fortunately read al-Rāzī's own arguments in the first part (*faṣl*) of the text. After a rhetorical introduction in which he praises kings who show an inclination for science and who make it possible for thinkers to devote their life to science – mentioning his patron at that time, Amīr Abū al-'Abbās Ahmed ibn 'Alī – al-Rāzī turns to discussing his own purpose:

[Abū al-'Abbās] heard of the books of the great Galen and of the doubts that I extracted from them [and raised] against him. Then he asked me to look into each book and to gather its notions (*'ağma' ma'ānī*) in a condensed manner (*bi-'iḥtiṣār*), leaving aside superfluous passages (*'aṭruḥ faḍllan*), if there were any, and to comment (*'ašrah*) upon the obscure passages, as well as to re-organise what was disjoined (*'anzam*

21 Abū Bakr al-Rāzī, *Philosophical Works*, ed. Kraus (1939) 15–16.

22 See Sezgin (1970: 93).

23 See Gutas (1993: 35–6, 39–43).

mā kāna mutafariqqan), and to add what was missing (*ʿazīd mā kāna fīhi nāqiṣan*).²⁴

Al-Rāzī explains that he chose to start with *Therapeutic Method* because this particular treatise was the ultimate fruit (*tamar*) of Galen's books and their primary point (*ḡāyatuhā*). That a ninth-century Islamic physician chose to focus on this specific treatise may seem somewhat surprising. On first impression, Galen's *Therapeutic Method* reads like a polemic against the head of the Methodists, Thessalus, and is thereby deeply rooted in its historical context. Moreover, according to al-Rāzī, the reference to the Methodists is not pertinent to the contemporaneous medical context. Therefore, a ninth-century physician does not need to follow the particular path that Galen followed when attacking the Methodist sect, because time and the progress of medical science had already proven it wrong. For this reason, the method that al-Rāzī adopts in this abridgement is based on the separation of 'what is useful and excellent for the treatment of diseases' compared to 'what is not this way and where Galen exaggerated'.²⁵ He removes the polemical context and replaces it with a more general framework on medical methodology, especially on the powers of drugs. This topic is central in both Galen's and al-Rāzī's pharmacology and is a matter of dissension between them.²⁶

2 Doubting Galen

It clearly appears that what brought al-Rāzī to abridge this treatise was not a mere historical interest in the conservation of Galen's treatises in a more accessible form. According to the outline that al-Rāzī sketches in the *Abridgement of the Treatise 'Therapeutic Method'*, his abridgements should be read along with another of his masterpieces, *Doubts About Galen*.²⁷ In this treatise, al-Rāzī raises objections about passages where he contends Galen either contradicts himself or bases his opinion on invalid or weak arguments. In this polemical

24 Abū Bakr al-Rāzī, *Abridgement of Galen's Treatise 'Therapeutic Method' (Talḥīṣuhu li-ḥīlat al-bur')*, Escorial Ms ar. 801/1, fol. 3b.

25 Abū Bakr al-Rāzī, *Abridgement of Galen's Treatise 'Therapeutic Method' (Talḥīṣuhu li-ḥīlat al-bur')*, Escorial Ms ar. 801/1, fol. 4a.

26 On the reception of Galenic pharmacology in the Islamic medical tradition, see Chipman (Chapter 16) in this volume.

27 The *Doubts About Galen* have been edited twice: Muḥaqqiq (1993) and 'Abd al-Ġanī (2005). I have prepared a new edition with introduction and French translation: Koetschet (2019).

treatise, al-Rāzī scrutinises passages extracted from more than twenty Galenic writings. Al-Rāzī focuses on both philosophical and medical issues, and this hybridity is probably what saved the work from the fate of his philosophical treatises. Due to Al-Rāzī's very unorthodox views on cosmology, most of his philosophical works suffered an almost non-existent transmission and are now accessible only through quotations by his adversaries.²⁸ *Doubts About Galen* is highly significant for understanding al-Rāzī's natural philosophy. As Shlomo Pines explained, *Doubts About Galen* helps in better understanding the relationship between al-Rāzī's medico-philosophical system and the doctrines of those whom he considered his predecessors.²⁹

Galen stands out for several reasons as the most central element in this intellectual network. First, al-Rāzī engages with the Aristotelian background of Galen's natural philosophy on such topics as time, void, and matter. Second, al-Rāzī shares with Galen a strong interest in Plato's *Timaeus*. Galen authored the lemmatic commentary *On Plato's 'Timaeus'* and *Synopsis of Plato's 'Timaeus'*.³⁰ Galen's *Timaeus* commentary is fragmentary in Greek and Arabic, and the *Synopsis* is preserved only in its Arabic version.³¹ Galen's *Synopsis* played a central part in the reception of the *Timaeus* by Arab philosophers, and by al-Rāzī in particular, as there is no definitive proof that the *Timaeus* was ever translated into Arabic until the modern period – or that it was not.³² Moreover, previous scholars have shown that Galen's *Synopsis* appears to be an important source for the dialogue for al-Rāzī, as do quotations by Galen in other treatises, including *On the Doctrines of Hippocrates and Plato*, *The Capacities of the Soul Depend on the Mixtures of the Body*, and *On Customary Practices*.³³ Last but not least, the Platonic topics from the *Timaeus* that al-Rāzī engages in *Doubts About Galen* as well as in other treatises include pleasure (64a), vision (45b–46a), the tripartition of the soul (69c–71a), a teleological explanation of the human body (68e), and matter (54d–55c). In the ethical treatise *On Spiritual Medicine* and in *Doubts About Galen*, al-Rāzī endorses a theory of pleasure as replenishment that is intricately related to the *Timaeus'* doctrine of pleasure, as previous studies have shown.³⁴ As a consequence of al-Rāzī's main access to the *Timaeus* being through Galen, Galen's Plato shaped al-Rāzī's Plato.

28 For an edition remaining fragments of al-Rāzī's philosophical works, see Kraus (1939).

29 Pines (1953, repr. 1986: 482).

30 In writing this section, I benefited a lot from the reading of Aileen Das' (2013) thesis. I express my warmest thanks to Aileen Das.

31 Galen, *Synopsis of Plato's 'Timaeus' vers. arab.*, ed. Kraus and Walzer (1951).

32 See Arnzen (2011: 185).

33 See Rashed (2009b); Das (2013: 40–94).

34 Bar-Asher (1989: 119–48); and Adamson (2008: 83–94).

3 Galen between al-Rāzī and His Contemporaries

Al-Rāzī reception of Galen's writings can be referenced by three topics where medicine and philosophy overlap: matter and the elements; teleology; and optics. Al-Rāzī used the Galenic corpus to shape his own contribution to contemporary debate, the first of which focuses on the conception of matter and the elements. Whereas Galen's understanding of the tripartite soul remained primarily Platonic, his theory of the elements relied heavily on Aristotle's philosophy of nature.³⁵ One of Galen's main motives in adopting the Aristotelian system goes back to his rejection of atomism. On the other hand, al-Rāzī is one of the few Arabo-Islamic medieval philosophers to endorse an atomistic concept of matter. During the Islamic period, rational theologians defended this view.³⁶

Al-Rāzī's atomism is mainly known through fragments of his philosophical treatises preserved in sources hostile to him, such as Nāṣir-e Ḥusraw's (d. c. 1088) *Provision of the Travellers* (*Zād al-musāfirin*).³⁷ In addition to these fragments, the critical reception of Galen in *Doubts About Galen* is also essential for al-Rāzī's conception of matter, because Galen was an opponent whom al-Rāzī could not ignore. In *Doubts About Galen*, the first discussion on atomism occurs in relation to the Galenic treatise *On the Natural Capacities*. In this instance, al-Rāzī explains that not all the atomists identify atoms and void as the only components of nature. According to him, Galen's rejection of atomism is in opposition to this version of atomism, whereas another trend in atomism posits the existence of other entities besides atoms and void. The main issue here is the existence of a separate soul.

In so far as al-Rāzī argues in favour of the existence of a separate soul, his version of atomism is clearly distinct from ancient atomism, and thus, is rightly called a 'hybrid' by Shlomo Pines. While responding to Galen's *On the Elements according to Hippocrates*, al-Rāzī attacks Galen for having intentionally reduced atomism to a theory according to which only atoms and void existed. In response to this reduction, he outlines the principles he claims are shared by every atomist theory. According to this outline, atoms combine in five different ways, and this is how celestial bodies and the four elements were produced. This text makes clear that al-Rāzī knew the Platonic solids from the *Timaeus*. Al-Rāzī's source here is most probably Galen's *Synopsis*, perhaps supplemented

35 Hankinson (2008: 212); Kupreeva (2014: 143).

36 On the doctrines of nature of rational theologians, see Dhanani (1994: 1–14).

37 More in Pines (1997: 41–2, 44–7, 50–4) and Baffioni (1982: 123, 127–8, 130, 132–3).

with neo-Platonic and neo-Pythagorean elements. Al-Rāzī also engages Galen's account of different theories of void in the lost treatise *On Demonstration*.³⁸

Through his examination of Galen on such topics as continuous matter, the elements, and void, al-Rāzī was doing his part to shape contemporary debate. In the ninth-century Islamic world, the champions of atomism were mostly rational theologians (*mutakallimūn*), but also 'proponents of matter' (*'aṣḥāb al-hayūlā*).³⁹ Some of al-Rāzī's detractors counted him as one of the most prominent advocates of this theory.⁴⁰ Indeed, al-Rāzī authored a treatise – *Response to the Mutakallim al-Miṣma'ī's Response to the Proponents of Matter* (*Kitāb al-Radd 'alā al-miṣma'ī al-mutakallim fī raddihi 'alā 'aṣḥāb al-hayūlā*) – in which he engaged with the Mu'tazilite theologian al-Miṣma'ī (d. c. 891). In this work, al-Rāzī counters his opponent's refutation of those who believe in the eternity of the world. Thus, it seems, al-Rāzī did not consider himself a proponent of matter endorsing the doctrine of the world's eternity. In this context, the Galenic tradition, including all translations, summaries, and commentaries, was a rich repository of atomist theories and anti-atomist critics who stimulated al-Rāzī as well as the theologians.⁴¹

In addition to his rejection of atomism, Galen's endorsement of the Aristotelian theory of the elements is also coherent with the version of teleology developed in his great work on teleological anatomy, *On the Function of the Parts of the Body*. Teleology is the second topic that I will examine to explore the cross-pollination of Galen's reception and the contemporary debates in al-Rāzī's writings. This treatise is dedicated to demonstrating that the composition of animals, similar to the world as a whole, can only be explained by the action of a Demiurge, who is characterised both by his intelligence and providence.⁴² Here again, the reference to the *Timaeus* is central. Galen's Demiurge, like Plato's, is limited in what he can construct by the constraint imposed by the nature of matter. The wise arrangement of bodies – especially of the human body – and establishing that this world is the best possible world are central issues in al-Rāzī's cosmology.⁴³ Therefore, it comes as no surprise that al-Rāzī was particularly interested in Galen's teleology. In the section of *Doubts About Galen* dealing with *On the Function of the Parts of the Body*, however, al-Rāzī shows no benevolence towards Galen, pointing out where, according to him, the Galenic teleological system reaches its limits. On this occasion, al-Rāzī's

38 See Adamson (2014).

39 On these 'proponents of nature', see Dhanani (1994: 4).

40 See Pines (1997: 41).

41 More in Langermann (2009: 277–95).

42 Flemming (2005: 72–75).

43 Rashed (2009a: 157–62).

critiques hint at his own philosophical system, which is meant to provide the solutions to the problems that he has identified.

Al-Rāzī's main critique is that Galen never provides a firm basis for his initial claim that the body is the instrument of the soul. The only way to firmly establish this claim would be to argue in favour of a separate soul and a temporal creation of the world. Both these claims, however, stand in contradiction to Galen's avowed scepticism on the nature of the soul and the generation of the world as espoused in *On My Own Opinions*, Book 2.⁴⁴ While Galen, following Plato's *Timaeus*, has clearly outlined that what is at stake in teleological anatomy is the issue of the best possible world, and highlights the constraints imposed by matter itself, he does not provide a satisfactory solution. In book 3 of *On the Function of the Parts of the Body*, Galen compares the perfection of the celestial spheres to the perfection of the body, asserting that the wisdom deployed in the celestial spheres is equal to the wisdom deployed in the body. The arrangement of the body is as perfect as it could be, given the matter that it was created from, namely, 'menstruation blood and semen'.⁴⁵ According to al-Rāzī, however, the constraints imposed by matter are not enough by themselves to solve the main problem underlying any teleological system, that being the existence of evil:

I say: this passage establishes clearly that matter is not created by the Demiurge [literally: the giver of forms], and that the Demiurge can only bring about in any matter [the form] that it can take. If things are this way, why would the Demiurge be wise and intelligent, since it is impossible for him to bring about in matter an animal that does not suffer or die? Wisdom and intelligence, in this case, would have been not to create it at all, in order to spare him of any suffering, death, affliction and pain.⁴⁶

According to al-Rāzī, Galen was right to resort to biology to establish that the world is assembled in the best possible way, but he failed to see that there is a contradiction between the Demiurge's wisdom and omnipotence. The only way to address the problem of evil in the world is to turn the teleology into a theology, whereby a wise and benevolent creator is responsible for the composition of the body, and into a theodicy, inasmuch as theodicy constitutes an

44 Galen, *Prop. Plac.*, 2, ed. Boudon and Pietrobelli (2005) 172.31–173.27.

45 Galen, *UP*, 3.10, ed. Kühn (1822) 111.238 = ed. Helmreich (1907) 1.174–5. Paris BNF MS Ar. 2853, fol. 56a l. 9 sq.

46 Abū Bakr al-Rāzī, *Doubts About Galen (Kitāb al-Šukūk ‘alā Ġālīnūs)*, ed. Muḥaqqiq (1993: 17), modified.

attempt to understand how such a benevolent God could allow the manifestation of evil. By refusing to engage in the issue of the nature of the soul and the creation of the world, Galen's teleology remains insufficient.

Here again, to understand al-Rāzī's reception of Galen's teleology, one must reconstruct the intellectual context from which it came. The existence of evil in the world was the core of a controversy between al-Rāzī and another Mu'tazilite theologian named al-Ka'bī (d. 931).⁴⁷ Criticism of Galen's teleology gave form to al-Rāzī's own cosmo-theological system, which is based on combining the eternity of 'absolute matter' with the world composed by a Demiurge. According to this theory, the creation of the world was motivated by the association of the universal Soul with matter. Thereby, it preserved the creator's justice and wisdom, but curtailed omnipotence.

The third topic in examining al-Rāzī's reception of Galen is optics. By al-Rāzī's time, the predominant theory of vision among physicians was the Galenic extramission theory, which, for example, forms the basis of Ḥunayn ibn Ishāq's *Book of the Ten Treatises on the Eyes* (*Kitāb al-Aṣr maqālāt fī al-ʿayn*). Galen expounds his visual theory in three treatises: books 5 and 13 of *On Demonstration*, book 10 of *On the Function of the Parts of the Body*, and book 7 of *On the Doctrines of Hippocrates and Plato*. Galen's theory relies on the anatomy of the eye and the function that he ascribes to psychic (*psychikon*) *pneuma*. According to Galen, the eye emits a ray of luminous (*augoeides*) *pneuma* that transforms the air contiguous with the eye into its own nature. Owing to the surrounding air, the visual *pneuma* stretches to the visible object.⁴⁸ In other words, a ray of light emitted from the eye travels to visible objects.

In contrast to Galen and also to most of his contemporaries, al-Rāzī's main objective was to show the superiority of intromission theories over those of extramission. Al-Rāzī devoted numerous treatises to studying optics, but none have survived.⁴⁹ Ibn Abī Uṣaybi'ah, speaking on one of these treatises, makes the tantalising remark that al-Rāzī criticised the extramission theory.⁵⁰ The *Book to al-Manṣūr* seems to confirm this report. In the section on the disposition of the eye, al-Rāzī explains that the contraction and dilation of the pupil

47 On this controversy, see Rashed (2000: 39–54; 2004: 169–82); Vallat (2015: 213–51; 2016: 178–220).

48 On Galen's theory of vision, see Boudon-Millot (2010: 551–67); Ierodiakonou (2014: 235–47).

49 Ibn Abī Uṣaybi'ah, *Sources of Information on the Classes of Physicians* ('*Yūn al-anbā' fī ṭabaqāt al-aṭibbā'*'), ed. Müller (1882) 1.317.

50 Ibn Abī Uṣaybi'ah, *Sources of Information on the Classes of Physicians* ('*Yūn al-anbā' fī ṭabaqāt al-aṭibbā'*'), ed. Müller (1882) 1.317.

depends on the quantity of external light required by the crystalline moisture (*al-ruṭūba al-ḡalīdīya*), not on the visual *pneuma* sent to this crystalline moisture, as Galen believed.⁵¹ The importance of al-Rāzī's contribution to optics in *Doubts About Galen* has been highlighted by Pines.⁵² Optics is one of the topics that al-Rāzī treats extensively in *Doubts About Galen*. He engages with it on three different occasions in response to the three main Galenic treatises in which optics is examined.

Al-Rāzī's objections to Galen fall into two categories. First, he counters Galen's arguments in favour of the circulation of a visual *pneuma* through the optic nerves to the eye and ridicules Galen's idea that the visual *pneuma* makes the air sentient. Second, and most important for purposes here, he rejects Galen's refutation of the ancient atomist theory of vision. Al-Rāzī reports that Galen claimed that if something issues from the visible object, then it would diminish (*yaqṣur*) or fade away (*yaḍmaḥḥil*). Al-Rāzī argues, however, that Galen's refutation does not invalidate all intromission theories, because not all the proponents of the intromission theory support the idea that something material issues from the sense object. Some of them hold that what issues from the visible object is not a bodily substance (*ṣay' ḡismī*). Thereby, al-Rāzī radically distances himself from the ancient atomists' theories to endorse an understanding of vision close to that of Aristotle's. The immaterial nature of the images reflected in the eye is indeed a distinct feature of the Aristotelian critique of the ancient atomists (*On the Soul*, 424a17). That these images are immaterial plays an important part in al-Rāzī's visual theory, where it has a physiological basis. In opposition to the Galenic visual *pneuma*, al-Rāzī shows that no bodily substance can flow through the optic nerves to the crystalline moisture, because this bodily substance would prevent the transmission of the image to the brain through the nerves.

In opposition to Galen's extramission theory, al-Rāzī develops a synthesising intromission theory that has an Aristotelian basis combined with Platonic and Neo-Platonic elements. Al-Rāzī's theory of vision represents the first act of the intromission-extramission debate that would shape the field of optics in Islam. While al-Kindī (d. 873) and Ḥunayn both defended extramission theories, al-Rāzī takes the opposite view and supports – perhaps for the first time in Islam – an intromission theory that combines the projection of an immaterial image on the eye with Galenic physiological and anatomical discoveries.

51 Abū Bakr al-Rāzī, *Book to al-Manṣūr (al-Kitāb al-Manṣūrī)*, ed. Siddīqī (1987) 59; Galen, *PHP*, 7.4, ed. Kühn (1823) v.614–16 = ed. De Lacy (1984) 11.450.10–452.7.

52 Pines (1986: 485–6).

4 Aftermath

Al-Fārābī's (d. 950) engagement with Galen offers a powerful counterpoint to al-Rāzī's. Al-Fārābī was a rough contemporary of al-Rāzī, but his engagement with Galen's writings bears traces of the tensions between the Aristotelian and Galenic traditions. By al-Fārābī's time, most of Aristotle's logical as well as biological treatises had been translated into Arabic, as well as those of his late antique commentators. In *Commentary on Aristotle's 'On Interpretation'*, al-Fārābī shows that he was an assiduous reader of Galen's treatises.⁵³ In *Rhetoric*, he deals with various methods of unfair polemics, and instead of giving examples from his own milieu, he singles out Galen, whom he accuses of using rhetoric in science on multiple occasions. For example, he notes Galen's treatment of Thessalus in *Therapeutic Method* and of Mendaberius in the last book of *On the Doctrines of Hippocrates and Plato*, asserting that Galen put himself on a higher level and lowered his opponents.⁵⁴ Al-Fārābī also finds Galen guilty of the rhetorical use of common opinions. Beyond the critique of these logical flaws, al-Fārābī's natural philosophy was deeply rooted in Aristotelian tradition, and al-Fārābī made Galen a target of attack when he deviated from the teachings of the Stagirite.

The contrasting positions between Galen and al-Fārābī reach a dramatic point when it comes to the rational soul and of its localisation in the body. On this topic as in others, the late second/early third-century commentator Alexander of Aphrodisias is a key figure in understanding al-Fārābī's reception of Galen.⁵⁵ The Aristotelian tradition, mainly in the writings of Alexander of Aphrodisias, defended a cardiocentric view, according to which the origin of nerves and voluntarily motion lie in the heart. This doctrine stood in opposition to Galen's cerebrocentric view of Platonist origin, by which the origin of the nerves and the controlling part of the soul lie in the brain. In *Response to Galen on Aristotle's Mistakes on the Parts of the Body* (*Risāla al-radd 'alā Ḡālīnūs fī-mā nāqiṣ fī-hi Aristūṭālīs li-a'ḍā' al-insān*),⁵⁶ al-Fārābī departs from the Platonist framework of Galen's (and al-Rāzī's) doctrine on the rational faculties of the soul. In this treatise, his main argument is similar to that of Alexander: this theory seems the only way to guarantee the unity of the soul as well as the body.

53 See Zimmermann (1981: lxxxi–lxxxiv).

54 Langahde and Grignaschi (1986: 71).

55 For more on Galen and Alexander of Aphrodisias, see Fazzo (2002: 109–44); see also Pietrobelli (Chapter 1) in this volume.

56 Al-Fārābī, *Response to Galen on Aristotle's Mistakes on the Parts of the Body*, ed. Bādāwī (1983) 38–107.

The Galenic corpus continued to play a central role for Arabo-Islamic physicians even after tensions between the Galenic and Aristotelian traditions were brought to light. In this context, the reception of Galen by al-Rāzī elicited the interest of many physicians. In addition to their attempts to defend the great master, these physicians had different reasons to engage with al-Rāzī's interpretation of Galen. Ibn Abī Sādiq (d. after 1068), Ibn Riḍwān (d. either 1061 or 1068), Abū al-'Alā' ibn Zuhr (d. 1131), and 'Abd al-Laṭīf al-Baġdādī (d. 1232) each authored a treatise titled *Resolution of the Doubts About Galen* (*Ḥall šukūk al-Rāzī 'alā Ġālīnūs*).⁵⁷ Unfortunately, only Abū al-'Alā's is extant.⁵⁸ Fragments from Ibn Abī Sādiq's *Resolution* have survived through an indirect tradition, in the form of quotations by Ibn Abī Sādiq himself in his *Commentary on the Aphorisms*.⁵⁹

Ibn Riḍwān's *Useful Book on How to Teach the Art of Medicine* (*al-Kitāb al-Nāfi' fī kayfiya ta'līm šinā'a al-ṭibb*) offers insight into reactions to several writings by al-Rāzī on Galen and the reception of the Galenic treatises in the medical curriculum.⁶⁰ Ibn Riḍwān was a Cairene physician who devoted much thought to the reception and implementation of the teachings of past masters, especially the authors of the Hippocratic corpus and Galen.⁶¹ Galen was the main model for his personal and professional life. In the *Useful Book on How to Teach the Art of Medicine*, he condemns the medical education system of his time and the intellectual production of his contemporaries. He bases his disdain for contemporary medical education on the core of the curriculum consisting of over-simplified medical abridgements produced by his forebears. In the second part of the treatise, his main targets are Ḥunayn Ibn Ishāq and al-Rāzī and their supposed misunderstanding of the Greek sources.

57 On these treatises, see Ullmann (1970: 68).

58 It is contained in one unique manuscript, MS Riḍawī 13997, which is preserved in the Āstān Quds Riḍawī library in Mashhad (Iran). A copy of this manuscript is to be found at the University of Tehran under the reference MS Danišgah 3269. This manuscript is non extant; in addition to several lacunas within the text, the end of the treatise is missing. Šalāḥ al-Dīn al-Munaḡġid refers to a manuscript that is supposed to be preserved at the library Al-'Abdaliya and bears the title *Kitāb al-Tabyīnī fī qat'i al-šakki li-l-yaqīni intiṣārān li-Ġālīnūs 'an al-šukūki al-mansūbati li-Abū Bakr al-Rāzī*. The manuscripts of Al-'Abdaliya belong now to the National Library of Tunisia. Unfortunately, the director of the department of manuscripts of the National Library does not know of any manuscript with this title nor shelfmark.

59 I would like to thank here Peter E. Pormann who provided me with passages that he and the team working on the 'Arabic Commentaries on the Hippocratic *Aphorisms*' extracted, before their edition was published.

60 On Galen's reception by Ibn Riḍwān, see Forcada (Chapter 12) in this volume.

61 On Ibn Riḍwān's opinions on medical ethics as well as pedagogical method in medicine, see Reisman (2012: 25–39).

In the last part of the treatise, Ibn Riḍwān spares al-Rāzī no attack. According to Ibn Riḍwān, al-Rāzī was a victim of self-delusion; because al-Rāzī had read many books on the discipline of medicine, he thought he had mastered various other disciplines, such as logic, astronomy, and natural philosophy. Al-Rāzī's over-inflated self-esteem also led him to err in his own field. Aside from *The Comprehensive Book on Medicine*, which Ibn Riḍwān highly valued, he thought that al-Rāzī showed no understanding of Galen's main goals and methods.

Unsurprisingly, *Doubts About Galen* also comes under fire from Ibn Riḍwān. He mentions that he had written a treatise in which he invalidates al-Rāzī's objections, showing that they stem from al-Rāzī's own deficiencies. Ibn Riḍwān also argues that al-Rāzī's abridgements of Galen's writings are similarly flawed, his main example being al-Rāzī's *Synopsis of Galen's Therapeutic Method*. These criticisms should be understood in the context of Ibn Riḍwān's overall dissatisfaction with the summaries that replaced the reading of the extensive Galenic writings and were responsible for the decline of medicine.

Resolution of the Doubts About Galen (*Ḥall šukūk al-Rāzī 'alā Ḡālīnūs*) by Abū al-'Alā' ibn Zuhr provides a glimpse of the reception of Galen in the twelfth-century defence of the Greek physician against al-Rāzī's attacks.⁶² Abū al-'Alā' ibn Zuhr was a physician from Cordoba (d. 1131).⁶³ His best-known book is a small practical handbook that he wrote for his son Marwān 'Abd al-Malik and bears the title *al-Taḍkira*.⁶⁴ The son would enjoy even greater fame than his father, becoming known in the Latin world by the name Avenzoar, whose most famous work is the *Book Opening the Path to Therapeutics and Diet* (*Kitāb al-Taysīr fī al-mudāwāt wa al-tadbīr*).⁶⁵ Abū al-'Alā answered al-Rāzī's *Doubts About Galen* in his *Clear and Certain Treatise in Defense of Galen Against the Doubts Ascribed to Abū Bakr al-Rāzī* (*Kitāb al-Bayān wa al-tabyīn fī al-intiṣār li-Ḡālīnūs 'alā mā 'uḥiḍa 'alayhu fī ḡamī' kutubihī*). Abū al-'Alā finds to his great regret that in the writings of al-Rāzī, the 'encyclopedic method' is widespread like among his contemporaries.

Al-Rāzī's writings displayed an active reception of Galen's corpus, and his engagement with Galen's treatises was not merely aimed at preserving, commenting, and transmitting the master's knowledge. Al-Rāzī adapted this corpus to his needs as a physician as well as a philosopher. Indeed, in al-Rāzī's writings, Galen's significance reached far beyond the confines of professional

62 The edition of this text is in preparation in the framework of the project 'MediSophia: Galen and Arabic Philosophy' hosted in Aix-Marseille University.

63 Ullmann (1970: 162).

64 See Colin (1911).

65 See Ullmann (1970: 163).

medicine. The critical reception of Galen helped al-Rāzī shape his own medico-philosophical system and take positions in debates that were relevant to himself and his contemporaries. The reactions that al-Rāzī's engagement with Galen elicited in the Islamic world, in particular Ibn Riḍwān's indictment, show that the role of the Galenic corpus in the medical curriculum was a central issue for Arabo-Islamic physicians.

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Avicenna between Galen and Aristotle

Gotthard Strohmaier

It¹ was one of the fates of Abū ‘Alī al-Ḥusain ibn ‘Abdallāh ibn Sīnā (980 or earlier–1037),² known in the West as Avicenna, that he had no successor of equal stature who would replace his *Canon of Medicine* with a new and better handbook. Kurt Sprengel (1766–1833), one of the first European historians of medicine, laid the blame for this on none other than Avicenna himself, regarding him as a tyrant who, through his overwhelming authority, halted further progress for a long time to come.³ Such judgments continue to be repeated today.⁴ Galen of Pergamum is today considered the culmination of ancient medicine, because likewise he had no comparable successor, and by transmitting for posterity what had been achieved until his time, stifled further efforts in the field of medical theory. In reality, however, guilt must be assigned to the adverse social conditions of the age, both during the decline of the Roman Empire and in the early Middle Ages as well as the period of stagnation in the Muslim world that began to take hold after Avicenna’s death.

When the young Avicenna received permission to visit the library of the Samanid rulers in Bukhara, he asked first for the catalogue listing the *kutub al-awā’il* (books of the ancients).⁵ These were not, as one might surmise due to the geographical neighbourhood, works of old Persia or India or China, but Greek texts that had been translated into Arabic, mostly in ninth-century Baghdad, and spread from there over the vast Muslim territory, from al-Andalus in the west to Central Asia in the east. For more secular-minded Muslim intellectuals, the term ‘ancients’ (*al-mutaqaddimūna* or *al-awwalūna* or *al-qudamā’*) conveyed the idea that these authors were their own spiritual ancestors, who lived before the advent of Islam on their soil. Al-Fārābī believed that Aristotle had taught and eventually died in Alexandria.⁶

It was generally known that not only Peripatetic philosophy but also the study of Galenic medicine had flourished in Alexandria and travelled via the

1 All translations are mine, unless otherwise indicated.

2 About his adventurous life, see Strohmaier (2017: 15–42).

3 Weisser (1983b: 283–8).

4 Hamarneh (1971: 413–15).

5 Al-Jūzjānī, *The Life of Ibn Sīnā* (*Sirat al-ṣaykh al-ra’īs*), ed. Gohlmann (1974) 36.

6 Strohmaier (1987: 381–3), repr. in Strohmaier (1996: 314–16).

Syrians to Baghdad. It was the Alexandrian syllabus that was responsible for only Aristotle, with his commentators and Neoplatonic followers, and Galen, with his commentators and followers, having a durable impact in the East from among the vast literary output of the Greek world in the fields of philosophy and medicine. These men were the main representatives of pre-Islamic heritage in the sphere of knowledge of the natural world. In Ibn Abi Uṣaybi'ah's history of medicine, Galen is even called the 'seal of the great medical teachers' (*ḥātām al-aṭibbā' al-mu'allimīn*).⁷ The parallel with Muḥammad, regarded as the 'seal of the prophets' (*ḥātām al-nabiyyīn*) is obvious. Aristotle enjoyed a similar renown. In the words of his commentator Averroes (Ibn Rushd), preserved only in Latin translation, he was 'exemplar quod natura invenit ad demonstrandum ultimam perfectionem humanam in materiis' (the exemplar which Nature invented in order to show the utmost perfection in the realm of matter).⁸

The fact that the two authorities had similar conceptions facilitated the reception. Both shared the same basic concepts of natural philosophy, namely, the existence and modes of mixture of the four elements – fire, air, water, and earth – and above all, a wise nature. They were not, however, in absolute agreement. This was already evident in the period of the Arabs' reception in the ninth century in Baghdad. The Syrian court physician Yūḥannā ibn Māsawayh therefore decreed in his *Books of Medical Maxims*: 'When Galen and Aristotle agree on some issue, then it is so, but when they disagree, the truth is difficult to find for the intellect'.⁹

Muslim intellectuals who regarded themselves as philosophers were inclined to follow Aristotle's authority even when it came to details in the sciences where important advances had been made in Hellenistic times. One example is to be found in astronomy. In the first chapter of the first book of *Almagest*, Ptolemy was in full agreement with Aristotle's natural philosophy in subscribing to the existence of the four terrestrial elements and the one supra-lunar matter of the ether and its inherent circular motion. He was also, however, the heir to Hellenistic astronomy, with its complicated system of deferents and epicycles, excenters, and equants, which rather well comported with the observable motions of the planets but proved difficult to being imagined as physical

7 Ibn Abi Uṣaybi'ah, *Sources of Information on the Classes of Physicians* ('Uyūn al-anbā' fī ṭabaqāt al-aṭibbā'), ed. Müller (1882) 1.71.9–10.

8 Ibn Rushd, *Long Commentary on Aristotle's 'On the Soul'* (*Commentarium magnum in Aristotelis De Anima*), 3.14, ed. Crawford (1953) 433.143–5.

9 Yūḥannā ibn Māsawayh, *The Book of Medical Maxims* (*Kitāb al-Nawādir al-ṭibbiya*), ed. Jacquot and Troupeau (1980) 116.

reality. Muslim philosophers therefore retreated to the more understandable homocentric spheres rotating on different axes, a theory that Aristotle had borrowed from the astronomer Eudoxus of Cnidus (391/0–338/7 BC).

The relationship between philosophy and medicine was still complicated, as Galen was not only the heir of anatomical investigations pursued in the age of Hellenism, but was also by his own pretension a philosopher in his own right. His contemporary Alexander of Aphrodisias rebuked this notion, and the identification of Galen as merely being a competent physician prevailed among Muslim intellectuals, who mainly concerned themselves with philosophy.¹⁰ Physicians were less impressed by the disparagement of their great master. In the case of Avicenna, the conflict between Aristotle and Galen held sway only within the context of his great mind's quest to write an encyclopaedia of the whole medical art.

In Bukhara, Avicenna began his intellectual career with the study of Aristotle early on and only a bit later turned to the books of medicine, which he regarded as 'not one of the difficult sciences'.¹¹ Thus he regarded it as a settled field, and therefore only occasionally had to make a decision, when the authorities disagreed. One can compare his approach to that of another medical author of similar importance, but of a quite different intellectual stature. Abū Bakr Muḥammad ibn Zakarīyā' al-Rāzī (d. c. 925), known as Rhazes in the West, was a chief physician in hospitals in Baghdad and Rayy. He was less concerned about theory than experience. In *The Comprehensive Book on Medicine* (*Al-Kitāb al-Ḥawī fī al-ṭibb*), he juxtaposed the sometimes contradictory statements of earlier writers and enriched them with his own observations. In *Doubts About Galen* (*Kitāb al-Šukūk 'alā Ġālīnūs*), he propounds a clear notion of scientific progress by viewing members of his own generation, with their accumulated knowledge, as people who inherited capital that enabled them to multiply it still further.¹²

Avicenna was of a different mind, practising medicine only so he could gain access to ruling courts in Persia. He took it upon himself to organise the large amount of material in his astonishing memory into a comprehensive work, which he titled *Canon of Medicine* (*Al-Qānūn fī al-ṭibb*). Including *canon* in the title of a scientific handbook was not unusual. Avicenna probably got the idea from a passage in *On the Doctrines of Hippocrates and Plato*, where Galen praises the sculptor Polykleitus for his standard work, *The Canon*, about the

¹⁰ Boudon-Millot (2013: 131–2).

¹¹ Al-Jūzjānī, *The Life of Ibn Sīnā* (*Sirat al-šaykh al-ra'īs*), ed. Gohlmann (1974) 24.

¹² Al-Rāzī, *Doubts Against Galen* (*Kitāb al-Šukūk 'alā Ġālīnūs*), ed. Mohaghegh (1993) 3,6–7. On Galen and Rhazes, see Koetschet (Chapter 10) in this volume.

proper proportions of the human body.¹³ In contrast to his philosophical predecessor al-Fārābī, who included only some areas of medicine in his hierarchy of sciences,¹⁴ Avicenna regarded it *in toto* as part of the natural sciences. The result was an overlapping between the diverging statements of Aristotle, ‘the first teacher’, and Galen, whom Avicenna, although being highly dependent on him, usually disparaged as belonging to the class of ignorant physicians who failed to understand the subtleties of natural philosophy. Avicenna, both in his *Canon* and in the chapter on animals in his *Book of Healing* (*Kitāb al-Šifāʾ*), when obliged to choose between the two authorities, preferred Aristotle to the physician ‘who only posed as a philosopher’, while at the same time integrating a good deal of Galenic material into his own writing.

Avicenna’s special relationship to Aristotle and Galen can be set in relief in regard to three problems in anatomy and physiology, namely, the functions of the heart and brain, the transit of blood from the right to the left ventricle of the heart, and the emergence of the main organs in embryonic development. Galen was convinced, unlike other medical authors of classical antiquity, that medical problems could be resolved through anatomical research, and that by gaining insight into the appropriate construction of the animal body, one could also catch an awe-inspiring glimpse into the wisdom of Nature, whereby anatomy becomes ‘indeed the foundation of an exact theology’.¹⁵ This is later echoed in a statement attributed to Averroes: ‘If somebody occupies himself with the science of anatomy, then his belief in God will increase’.¹⁶ There is no evidence, however, that the systematic dissection of animals, let alone of human corpses, was ever practised in the Muslim world.¹⁷ That the importance of anatomy continued to be upheld, at least in theory, is shown by the entire text of *On Anatomical Procedures* being preserved in Arabic translation, whereas the Greek original survives only in part.

It was with the help of anatomy, including the vivisections of animals, often performed before a curious public, that Galen demonstrated by cutting or ligation that nerves were responsible both for voluntary movement and sense perception,¹⁸ and that their source was the brain and not the heart, as Aristotle

13 Galen, *PHP*, 5.3.16, ed. Kühn (1823) v.449.3–12 = ed. De Lacy (1984) 11.308.20–5.

14 Strohmaier (1983), repr. Strohmaier (1996: 34–7).

15 Strohmaier (2006: 142–3); see also Hankinson (1994: 1834–55).

16 Ibn Abī Uṣaybīʿah, *Sources of Information on the Classes of Physicians* (*ʿUyūn al-anbāʾ fī ṭabaqāt al-aṭibbāʾ*), ed. Müller (1884) 11.77.13–14.

17 Savage-Smith (1995: 67–110; 2007: 127–8).

18 Galen, *Foet. Form*, 5.2–4, ed. Kühn (1822) 1v.679.1–680.1 = ed. Nickel (2001) 82.18–84.5.

had believed in assigning the brain to the mere function of a cooling device.¹⁹ This approach by Galen roused in his lifetime the protest of a Peripatetic philosopher whose name he gives as Alexander of Damascus. This Alexander did not want to deviate from the teachings of his master and resorted, as Galen recounts in *On Prognosis*, to even doubting whether one should trust the senses at a performance such as Galen's, whereupon Galen withdrew in protest from the gathering.²⁰

Galen states in the first book of *On Anatomical Procedures* that Alexander was sometime later appointed as a public teacher of Aristotelian philosophy, probably in Athens. One may wonder whether Muslim historians who identify him with the well-known Alexander of Aphrodisias,²¹ who received this position sometime between 198 and 209, can be trusted.²² The first part of *On Anatomical Procedures* had already been written before 180,²³ but Galen's statement, 'Alexander of Damascus, who has now at Athens the honour of giving peripatetic lessons in public',²⁴ gives the impression of being a later insertion by him, having lived to 216. Most classical scholars firmly reject the identification.²⁵ Vivian Nutton opines: 'Total certainty about the identification is as yet impossible, but the Arabic evidence is strongly in its favour'.²⁶

One must always bear in mind that Muslim historians sometimes had access to more reliable information in their sources than is available today. It remains nevertheless open to question whether they always made good use of it. The Arabic double *nisba*, indicating origin, should be no obstacle in identifying a man who possibly changed his place of residence, as people here and there knew him from the town from which he had recently come.²⁷ The argument of this Alexander does not fit that of a true Peripatetic. This may be due to the situation of a heated quarrel. Al-Fārābī cites another incident of lively debate about the function of the heart and the brain, but unfortunately without indicating the source, according to which Galen promised ten thousand

19 Galen, *Prop. Plac.*, 3.3, ed. Nutton (1999) 60.14–18 = ed. Boudon-Millot and Pietrobelli (2005) 173.23–7; cf. Nutton's comm. (1999: 145–6).

20 Galen, *Praen*, 5.12–15, ed. Kühn (1827) XIV.627–9 = ed. Nutton (1979) 96.19–98.8.

21 Ibn Abī Uṣaybī'ah, *Sources of Information on the Classes of Physicians* ('*Uyūn al-anbā' fī ṭabaqāt al-aṭibbā'*'), ed. Müller (1882) 1.69.27–8 and 84.26–7.

22 Sharples (1996: 480).

23 Bardong (1942: 631–3).

24 Galen, *AA*, 1.1, ed. Kühn (1821) II.218.6–8 = ed. Garofalo (1986) 1.5.3–4.

25 Goulet and Aouad (1994: 126–7); Follet (1994: 140–2).

26 Nutton (1979: 189).

27 Cf. as another example Stephen of Athens or of Alexandria, see Wolska-Conus (1989: 82–9).

denarii to anybody who could show him by dissection that the nerves originate in the heart.²⁸

The dispute continued in the School of Alexandria,²⁹ and Avicenna reflects it, stating in the *Canon* that the physicians, Galen being prominent among them, believe the brain to be the source of sense perception, whereas Aristotle is correct in locating all the main faculties in the heart. As this is irrelevant to medical practice, the physicians can keep to their opinion.³⁰ On the other hand, Avicenna cannot deny what had been achieved in the meantime by anatomical and physiological research, so he finds a solution that mediates between Aristotle and Galen by suggesting that the heart, as chief of the other organs, delegates the mental functions to the brain and the functions of nourishment to the liver.³¹ In the encyclopaedic *Book of Healing*, he provides more detail. Here he describes how the brain and the liver may send mediators to the heart to utilise its properties.³² In his didactic poem *Urǧūza fī al-ṭibb*, Avicenna proves again to be an adherent of Aristotle when he states, 'The brain with the spinal marrow and the nerves protect the fire of the heart from becoming inflamed'.³³

Another prominent problem was the question of the movement of the blood, formed according to Galen in the liver, and how it could reach the left ventricle of the heart after first passing through the right ventricle. The movement of the blood in the body was not conceived as circulation, but along the lines of irrigating a garden.³⁴ Blood is created in the liver and is then distributed through the veins to the parts of the body to replace what had got lost there. Thus, it travels through the hepatic vein to the right ventricle of the heart, and from there through the 'arterious vein' (the pulmonary artery) to the lungs, to nourish them likewise. It is clear that under these conditions, the liver only needs to provide a small amount of venal blood. According to Galen, another small amount of blood penetrates from the right ventricle through invisible pores through the inter-ventricular septum into the left ventricle, where it mixes with the air that comes down from the lungs via the 'venous artery' (the

28 Al-Fārābī, *Book of Rhetoric* (*Kitāb al-Ḥaṭāba*), ed. Langhade (1971) 79.9–11.

29 Cf. Stephen, *Commentary on Hippocrates' Prognostic*, ed. Duffy (1983) 124–6.

30 Ibn Sīnā, *Canon of Medicine* (*Al-Qānūn fī al-ṭibb*), 1.1.6.1.1, (1877) 1.66.30–67.16.

31 Ibn Sīnā, *Canon of Medicine* (*Al-Qānūn fī al-ṭibb*), 1.1.5.1, (1877) 1.20.33–21.23.

32 Ibn Sīnā, *Book of Healing* (*Kitāb al-Šifā'*): *al-naḥs*, 5.8, ed. Anawati and Sa'id Zayed (1974) 233.9–234.21; Ibn Sīnā, *Book of Healing* (*Kitāb al-Šifā'*): *al-ḥayawān*, 1.3.1, ed. Montasir, Sa'id Zayed and Isma'il (1974) 39–46.

33 Ibn Sīnā, *Medical Poem* (*Urǧūza fī al-ṭibb*), ed. Jahier and Nouredine (1956) line 100.

34 Cf. e.g. Galen, *Part. Hom. Diff.*, ed. Strohmaier (1970) 60–1.

pulmonary vein).³⁵ Given this framework, the idea of circulation and reflux was not envisioned.

Avicenna simplified the matter by replacing the invisible pores with a real channel (*mağran*).³⁶ Moreover, he repeats Aristotle's error that the heart consists of three chambers,³⁷ although Galen had firmly declared this to be false in *On Anatomical Procedures*.³⁸ A correction came two centuries later by the learned physician Ibn al-Nafis (d. 1288).³⁹ In a commentary on the anatomical portions in Avicenna's *Canon*, he contradicts both Galen and Avicenna:

This is the right cavity of the two cavities of the heart. When the blood in this cavity has become thin it must be transferred into the left cavity where the *pneuma* is generated. But there is no passage between these two cavities, the substance of the heart is there impermeable. It neither contains a visible passage as some people have thought nor does it contain an invisible passage which would permit the passage of blood, as Galen thought. The pores of the heart there are compact and the substance of the heart is thick. It must, therefore, be that when the blood has become thin, it is passed into the arterial vein [pulmonary artery] to the lung, in order to be dispersed inside the substance of the lung, and to mix with the air. The finest parts of the blood are then strained, passing into the venous artery [pulmonary vein] reaching the left of the two cavities of the heart, after mixing with the air and becoming fit for the generation of *pneuma*.⁴⁰

The case of Ibn al-Nafis led to wild speculation in the historiographical literature, as if he had actually tackled a systematic dissection of animals, or even of a human corpse, and with this pioneering act had stimulated further research.⁴¹ In reality, his innovation in thinking met with almost no response in the Muslim world.⁴² Ibn al-Nafis had a physiological rationale for denying

35 Harris (1973: 317–22).

36 Ibn Sinā, *Canon of Medicine* (*Al-Qānūn fī al-ṭibb*), 3.11.1, (1873) 11.261.18.

37 Aristotle, *History of Animals*, 1.17, 496a4, 19–20; Ibn Sinā, *Canon of Medicine* (*Al-Qānūn fī al-ṭibb*), 3.11.1, (1877) 11.261.15–18.

38 Galen, *AA*, 8.10, ed. Kühn (1821) 11.621.2–5 = ed. Garofalo (2000) 445.19–21; and 10, ed. Simon (1906) 1.53.8–10, tr. 11.39.

39 Meyerhof (1935: 100–20); Iskandar (1980: 602–6). See also Fancy (Chapter 14) in this volume.

40 Tr. by Albert Z. Iskandar after the manuscripts of the *Commentary on the Anatomy of the Canon* (*Šarḥ tašrīḥ al-Qānūn*) in the Wellcome library; Iskandar (1967: 41–2).

41 For one of the last examples see Hehmeyer (2013: 332–3).

42 Meyerhof and Schacht (1971: 111.898).

the existence of the pores in the inter-ventricular septum, as the blood, still unrefined and not enriched with air would, when penetrating into the left ventricle, spoil the generation of the *pneuma* there.⁴³ One may ask whether he came to this conclusion by these deliberations alone or whether he had actually performed some kind of dissection. He may have relied only on descriptions by Galen,⁴⁴ who himself admitted that at first sight, the septum appears to be impermeable. On the other hand, one could also learn from Galen how to transfer results ascertained from knowledge of animal anatomy to the human body. Had Ibn al-Nafis been prepared himself to investigate the thickness of the septum, he could have done this easily by visiting the butchers at the marketplace.

With regard to epigenetic differentiation in the process of embryo development, Avicenna's dissent from Galen takes the form of a heated quarrel. Aristotle was convinced that of the three major organs, the heart appears first, before the brain and liver.⁴⁵ Galen, in *On My Own Opinions*, one of his last works, states that he had initially shared the same opinion,⁴⁶ but that he changed his mind based on what he had observed in his dissection of animal foetuses. He found that at an early stage, the size of the liver was far greater than that of the heart and the brain.⁴⁷ On the whole, his deliberations about the priority of the liver offer, as Diethard Nickel describes it, 'ein verwirrendes Geflecht verschiedenartiger Argumente' (a confusing tangle of diverse arguments).⁴⁸ Galen has to his credit, however, his own empirical data, something Avicenna does not.

Galen criticises the philosophers of his time who tried to deal with issues of foetal development without being competent in anatomy.⁴⁹ It was probably this remark that provoked Avicenna to lose his objectivity and indulge in outrageous polemics:

Later a self-styled expert (*fuḍūlī*) appeared claiming that the truth is that the first which is to be formed would be the liver because the first function of the body is nutrition so as if the case would thus be left to his

43 Meyerhof (1935: 117).

44 Cf. Savage-Smith (1995: 98–104).

45 Aristotle, *Generation of Animals*, 2.4, 740a1–5; *ibid.*, 741b15–22; *Parts of Animals*, 3.4, 666a6–11; *History of Animals*, 6.3, 561a9–15.

46 Galen, *Prop. Plac.*, 11.2, ed. Nutton (1999) 90.22–92.4 = ed. Boudon-Millot and Pietrobelli (2005) 182.18–24.

47 Galen, *Foet. Form.*, 3.3–9, ed. Kühn (1822) IV.660.15–664.4 = ed. Nickel (2001) 64.3–66.28.

48 Nickel (1989: 73).

49 Galen, *Foet. Form.*, 3.11, ed. Kühn (1822) IV.664.9–13 = ed. Nickel (2001) 66.33–68.3.

discretion and approval. This claim of his is futile with regard to experience for the careful observers in this field have never seen it as he asserts. With regard to logic and if it were as he asserts that the first to be created is that one the function of which is needed first, he should know that an organ of the living body is not to be nourished so long as life is not established by the natural heat. And if this is so then the organ must be created from which the natural heat and the animal spirit are spreading, and this before the nourishing one is made.⁵⁰

One would almost be inclined to believe that Avicenna is here attacking some other *fuḍūlī*, as he elsewhere does not refrain from calling Galen by name when quoting or attacking him, but it is clear that no one else is intended here.

One would furthermore like to know who these 'careful observers' (*aṣḥāb al-'ināya bi-hādā ṣ-ṣa'n*) are. In the *Book of Healing*, Avicenna refers to 'accomplished anatomists' (*aṣḥāb at-taṣrīḥ al-muḥaṣṣilūn*) who believe that the heart is created first.⁵¹ For this contention, Ursula Weisser has found no other possible testimony than Aristotle's observation of the *punctum saliens* (leaping point) appearing in incubated eggs as the first trace of the embryonic heart.⁵² Other Muslim experts, even those who criticise Galen in some minor details, knew of and quote no other reliable anatomists and always keep a respectful attitude towards him, as for example do Rhazes in his *Doubts About Galen*,⁵³ 'Abd al-Laṭīf al-Baġdādī in his description of Egypt,⁵⁴ and Ibn al-Nafīs in his commentary on Avicenna's anatomy.⁵⁵ Jon McGinnis, who deals at length with the two contradictory viewpoints, assumes rightly that Avicenna's insistence on the priority of the heart is to be seen as an outgrowth of his doctrine of the active intellect, *wāhib aṣ-ṣuwar* (the giver of forms), which needs the heart as the entrance for this creative activity.⁵⁶

50 Ibn Sīnā, *Canon of Medicine* (*Al-Qānūn fī al-ṭibb*), 3.21.1.2, (1877) 11.557.31–558.7.

51 Ibn Sīnā, *Book of Healing* (*Kitāb al-Šifā'*): *al-ḥayawān*, 1.3.1, ed. Montasir, Zayed and Isma'īl (1970) 44.12–13.

52 Aristotle, *History of Animals*, 6.3, 561a9–12; *Parts of Animals*, 3.4, 665a34–b1; Weisser (1983a: 235, n.76).

53 Al-Rāzī, *Doubts Against Galen* (*Kitāb al-Šukūk 'alā Ġālīnūs*), ed. Mohaghegh (1993) 1–2; translation in Pines (1953: 481), repr. in Pines (1986: 257).

54 'Abd al-Laṭīf al-Baġdādī, *Book of the Report* (*Kitāb al-Ifāda*), ed. Zand et al. (1965) 274.

55 Meyerhof (1935: 115).

56 McGinnis (2010: 238–43).

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The Reception of Galen after Avicenna (Eleventh–Twelfth Centuries)

Miquel Forcada

Before Ibn Sīnā's *Canon*, physicians from the Maghrib and the Mashriq in the tenth century had written several handbooks with the purpose of systematising Greek medical lore, in particular the work of Galen.¹ The books were *al-Kitāb al-Manṣūrī* (*Book to al-Manṣūr*) by al-Rāzī (d. c. 925), *Zād al-musāfir* (*Viaticum*) by Ibn al-Jazzār (d. c. 980), *al-Kitāb al-Malikī* (*The Royal Book*) by al-Majūsī (d. 994), *Kitāb al-Taṣrīf* (*The Arrangement of Medical Knowledge*) by al-Zahrāwī (d. c. 1013) and *Kitāb al-Mī'a fī al-ṭibb* (*Book of One Hundred [Sections] on Medicine*) by al-Masīhī (d. c. 1010). As is well known, this process of systematisation culminated with Ibn Sīnā's authoritative *Canon*, which gradually eclipsed the other handbooks.² It also eclipsed Galen: why read Galen if his medicine was already well explained in a condensed form in the *Canon*? This question seems to have been posed very often, if we are to believe 'Abd al-Laṭīf al-Baghdādī (1162/3–1232), who complained that most physicians of his time thought that they could do without Galen and Hippocrates because they knew the *Malikī* and the *Canon*, even if only superficially.³ It is possible that this specific testimony reflects the state of affairs among the physicians of the late eleventh- and early twelfth-century Mashriq, where the influence of the *Canon* spread.⁴ Galen,⁵ however, was revisited after Ibn Sīnā's times in

1 All translations are mine, unless otherwise stated.

2 Endress (2006: 383–4).

3 Joosse and Pormann (2010: 21). A similar text is found at the same time but in another place, Ibn Jumay's *al-Maqāla al-Ṣalāḥiyya fī iḥyā' al-ṣinā'a al-ṭibbiyya* (*Treatise to Saladin on the Revival of the Art of Medicine*), 2, ed. Fāhndrich (1983) 28–9. Ibn Jumay' (d. 1198) addressed this book to Saladin so as to draw attention to the poor state of medicine at this time.

4 Endress (2006: 387). However, the *Canon* was virtually unknown in eleventh-century Egypt and little known in Iraq and Egypt during Ibn Sīnā's lifetime (Conrad, 1995: 99), and possibly even after. Although Ibn Jumay' commented on the *Canon*, he mentions *al-Manṣūrī* by al-Rāzī and *Masā'il fī al-ṭibb* by Ḥunayn when he speaks in the *Maqāla* of the physicians who neglect Galen's work; and he quotes Ibn Sīnā only in passing (cf. Ibn Jumay', *al-Maqāla al-Ṣalāḥiyya* (*Treatise to Saladin*), 2, ed. Fāhndrich (1983) 32.

5 We should say 'Galen and Hippocrates' given that the latter's works were also considered as essential sources and were often known via Galen's commentary.

some intellectual locales presided over by physician-philosophers who were concerned with the Aristotelisation of philosophy and medicine inspired by al-Fārābī (d. 950),⁶ and also with the problem of medical education. This revival of Galen, which may date back to early eleventh-century Baghdad, can be seen as a westward expansion from eleventh-century Egypt with Ibn Riḍwān (d. 1061 or 1068) and ending in al-Andalus, where we find a renewed interest in Galen's works among the Aristotelising philosopher-physicians of the twelfth century, especially Ibn Bājja (d. 1139) and Ibn Rushd (1126–98).

6 Cf. Richter-Bernburg (1996: 94–7); Strohmaier (1998: 165–7); Gutas (2003: 145–62); and Forcada (2011a: 88–110). Although the subject falls outside the scope of this chapter, it is worth summarising the main features of al-Fārābī's approach to medicine so as to provide the necessary background for understanding some essential points that will appear later, and also the roots of Ibn Sīnā's medicine. Al-Fārābī spoke about medicine in several works and most particularly in two treatises dealing with Aristotle's biological studies, especially *Parts of Animals: Risāla fī Radd 'alā Jālīnūs fī mā nāqaḍa fī-hi Arīṣṭūṭālīs li-a'ḍā' al-ḥayawān* (*Epistle on the Refutation of Galen in which He Contradicted Aristotle on the Purpose of the Parts of the Animals*) and *Risāla fī A'ḍā' al-ḥayawān wa-af'ālī-hā wa-quwā-hā* (*Epistle on the Parts of Animals, their Actions and Faculties*), ed. Badawī (1980) 38–107. The crux of the problem was Galen's understanding of Aristotelean ideas (cf. moreover Aouad, 1997: 173–4). Al-Fārābī also propounded a definition of medicine understood as a 'productive art' (*poiētikē tekhnē, ṣinā'a fā'ila*), which avoided the common distinction between theory and practice ('ilm and 'amal): 'medicine is a productive art drawn from true principles that seeks, by means of the actions [of the art], to attain the health of human body' (*Risāla fī Radd 'alā Jālīnūs* (*Epistle on the Refutation of Galen*), ed. Badawī (1980) 38–9). Al-Fārābī went on to say (*ibid.*, 51) that, as a productive art, medicine is made up by: a subject/substrate – the human body; an end – preservation and restoration of health; and a means – food, drugs, and medical instruments. These three elements were further subdivided into seven categories (*ibid.*, 53–54; cf. Forcada, 2011a: 96–7), which were considered to be the essential parts of medicine. Although Plessner suggested that al-Fārābī's definition is Platonic in origin (Plessner, 1973: 309), it is worth noting that al-Fārābī could have found the references for this definition and this division of medicine in many works of Aristotle that he knew well such as *Parva Naturalia*, *Physics*, *Nicomachean Ethics* and so on; and it is probable that he also borrowed from other sources. On these grounds al-Fārābī made a sharp distinction between the theoretical basis of medicine, which belonged to natural philosophy, and medicine understood as an applied/productive discipline, which he compared to carpentry (al-Fārābī, *Risāla fī Radd 'alā Jālīnūs*, ed. Badawī (1980) 40). Al-Fārābī said that the perfect physician was the one who, on the one hand, mastered the theoretical universals that were incumbent on medicine, and, on the other, could perform the actions required by medical art on a patient (al-Fārābī, *Kitāb al-Milla*, (*Book of Religion*), 1, ed. Maḥdī (1967) 58).

1 The Eleventh Century: between Baghdad and Egypt

1.1 *Ibn al-Ṭayyib on Galen*

The writing of the *Canon* coincides in time with what was known as the 'Aristotelian school of Baghdad',⁷ where several notable physician-philosophers flourished in Yaḥyā ibn 'Adī's circle,⁸ including Ibn Zur'a (943–1008), Ibn al-Khammār (942–1017), and their disciple Abū-l-Faraj ibn al-Ṭayyib (d. 1043).⁹ The members of this group continued translating,¹⁰ discussing, and commenting on Galen and also taught medicine at the 'Aḡudī hospital, where some of them served as physicians. The Christian Ibn al-Ṭayyib was particularly prolific and wrote a great many commentaries on Hippocrates and Galen including the full series of the *Summaria Alexandrinorum*,¹¹ the famous collection of Galenic abridgements that was one of the mainstays of medical education in Alexandria and (as we will see) in Baghdad. It seems that Ibn al-Ṭayyib's commentaries were intended for teaching; Ibn Abī Uṣaybi'ah (d. 1270) states that he found a copy of Ibn al-Ṭayyib's commentary of Galen's *Therapeutics to Glaucōn* that had been used for study,¹² and still bore a note saying that it had been used in the 'Aḡudī hospital on the eleventh of Ramaḡān 406 (22 February 1016). Although this information may be seen as anecdotal, there is no doubt that Ibn al-Ṭayyib's commentaries of Galen and Aristotle were credited with making the Greek sources accessible and exerted a strong influence on students and scholars.¹³

In the only commentary that has been studied so far, Galen's *Art of Medicine*,¹⁴ two general features deserve mention.¹⁵ First, Ibn al-Ṭayyib is aware

7 For an overview of this school, cf. Ferrari (2005).

8 Kraemer (1986: 104–39).

9 On Ibn al-Ṭayyib, cf. Faultless (2010: 667–97); Ferrari (2006: 17 ff.); and Le Coz (2004: 199–200, 216).

10 Kraemer (1986: 120), where Ibn Zur'a's translation of Galen's *On the Function of the Parts of the Body* is mentioned.

11 For a list of Ibn al-Ṭayyib's commentaries of Hippocrates and Galen's works, cf. Ferrari (2006: 36–9); further information in Dietrich (1966: 23–7). See also Garofalo (Chapter 3) in this volume.

12 Ibn Abī Uṣaybi'ah, *'Uyūn al-anbā' fī ṭabaqāt al-aṭibbā'* (*Sources of Information on the Classes of Physicians*), 10, ed. Riḡā (1965) 323; for further details about Ibn al-Ṭayyib as a teacher, cf. Micheau (1982: 115).

13 Ibn al-Qiṭī, *Ta'rikh al-ḡukamā'* (*History of the Learned Men*), ed. Lippert (1903) 223; the author stresses the pedagogical purpose of the commentaries.

14 Cf. Garofalo (2008), which I follow next.

15 Garofalo (2008: 69–82).

of the tradition of the post-Galenic commentators; second, he uses texts translated from Greek into Arabic which differ from Ḥunayn's versions but coincide with the *Summaria Alexandrinorum*. In accordance with the Alexandrian style that he follows, Ibn al-Ṭayyib provides a thorough commentary on the text, which he explains and complements with abundant references to other works by Galen, other Greek physicians like Soranus and some philosophical sources. Ibn al-Ṭayyib occasionally disagrees with Galen,¹⁶ but he does not contest substantive issues (although he addresses controversial matters such as the definition of the discipline).¹⁷ In keeping with the author's interest in logic and epistemology, the methodological aspects are extensively developed.¹⁸ It seems, therefore, that Ibn al-Ṭayyib's commentary bears out the criticisms made of him by, among others, Ibn Sīnā.¹⁹ However, Cleophea Ferrari's remarks on the purpose of Ibn al-Ṭayyib's logical commentaries are worth bearing in mind;²⁰ the author was an original thinker who was not only very erudite but was also able to make novel contributions to science and philosophy. Regarding medical theory, the best example of this aspect of Ibn al-Ṭayyib's intellectual profile is found in an epistle entitled *Risāla fī al-Quwā al-ṭabīʿiyya ... wa-annahā wāḥida* (*That the Natural Faculties are One*), which was refuted by Ibn Sīnā.²¹ The objective of this short tract is to propound a theory that gives a unifying explanation (not found in either Galen or Aristotle) for the four actions involved in the process of nutrition – attraction, retention, digestion, and expulsion. The crux of the theory is that, although these actions are considered as separate faculties, they may all be subsumed by one general nutritional faculty located in the liver. An appraisal of this theory and the arguments with which Ibn Sīnā tried to refute it are beyond the scope of this chapter;²² but it is important to note that Ibn al-Ṭayyib, in his capacity as a natural philosopher, made an essential contribution to the diffusion and discussion of Galenism.

16 Garofalo (2008: 82–4).

17 Cf. Garofalo (2008: 120–5) tr. from Italian: 'this erudite commentary mentions the problem of "productive arts" early on, without expanding on it'.

18 Cf. in Garofalo (2008: 114–20), the Italian translation of the second section, which deals with division, definition, analysis, and synthesis.

19 Reisman (2003: 115 ff.); Ferrari (2006: 23–5).

20 Ferrari (2006: 92–4).

21 Cf. the edition, English translation, and commentary of both texts in Reisman (2008–9). It is worth noting that Ibn Sīnā was interested in Ibn al-Ṭayyib, and not the other way round.

22 On this issue, cf. Reisman (2008–9: 290–301).

1.2 *Ibn Riḍwān on Galen*

A member of the generation that followed that of Ibn al-Ṭayyib, Ibn Riḍwān (d. 1061) continued the commentary on Galen in another context, namely Fatimid Egypt. The backgrounds of the two authors were also different. Ibn al-Ṭayyib pursued his career in an environment that was conducive to medical and philosophical education, while Ibn Riḍwān could not afford the cost of his medical training and it also seems that the standards in Egypt were lower than those that Ibn al-Ṭayyib's circle would have enjoyed. Although our perception of medical education in eleventh-century Egypt may be biased by Ibn Riḍwān's complaints,²³ to judge by testimonies from the twelfth century he does not seem to have exaggerated greatly.²⁴ Ibn Riḍwān worked hard at his self-education and was able to overcome all material and intellectual obstacles to establish himself as a noted physician and as a competent astrologer and philosopher.²⁵ The pinnacle of his career was his appointment as chief physician of the Fatimids and, from this privileged position, he dominated Cairo's medical scene for years.

Proud of his self-education and his achievements, Ibn Riḍwān wrote an autobiography that is partially preserved in Ibn Abī Uṣaybi'ah's *Sources of Information on the Classes of Physicians* ('*Uyūn al-anbā' fī ṭabaqāt al-aṭibbā'*),²⁶ and two works explaining the right way to study medicine, *Al-Kitāb al-Nāfi' fī kayfiyya ta'līm šinā'at al-ṭibb* (*Useful Book on How to Teach the Art of Medicine*) and *Maqāla fī al-taṭarruq bi-l-ṭibb ilā sabīl al-sa'āda* (*Treatise on Achieving Happiness through Medicine*), which can be considered as a justification of his personal process of education.²⁷ When Ibn Buṭlān (d. c. 1063), a distinguished disciple of Ibn al-Ṭayyib, arrived in Cairo around the mid eleventh century, Ibn Riḍwān engaged in a famous polemic with him on a variety of issues. Since the heart of the dispute was Ibn Butlan's attempt to challenge Ibn Riḍwān's authority,²⁸ one of the main points at issue was whether learning on one's own was better than studying with teachers. Given that Ibn Buṭlān had been able to study with Ibn al-Ṭayyib while Ibn Riḍwān had not (but may well have wished

23 Dols (1984: 56–7).

24 Ibn Jumay', *al-Maqāla al-Ṣalāhiyya* (*Treatise to Saladin*), ed. Fāhndrich (1983) *passim* and Abū al-Ṣalt al-Dānī, *Risāla Miṣriyya* (*Egyptian Epistle*), ed. Hārūn (1951) 31–7.

25 On Ibn Riḍwān's life and education, cf. Dols (1984: 54–67, and the bibliography mentioned at 54–5, n.262).

26 Ibn Abī Uṣaybi'ah, '*Uyūn al-anbā' fī ṭabaqāt al-aṭibbā'* (*Sources of Information on the Classes of Physicians*), 14, ed. Riḍā (1965) 561–2; cf. Reisman (2009; 2012).

27 Conrad (1995: 97).

28 On this polemic, cf. Schacht-Meyerhof (1937) and the new approach given by Conrad (1995).

to in his younger days),²⁹ the polemic had a personal dimension that involved Ibn al-Ṭayyib and his commentaries on Galen.³⁰

It may be then that Ibn Riḍwān's interest in Galen had to do with his knowledge of the patterns of teaching followed in Ibn al-Ṭayyib's circle, but there were other factors of even greater importance, such as Ibn Riḍwān's self-construction as a physician-philosopher according to the model set out in Galen's *The Best Doctor is also a Philosopher* and the ethics contained in the Hippocratic works,³¹ or the influence of al-Fārābī, explicitly mentioned by Ibn Riḍwān in his autobiography.³² Ibn Riḍwān knew al-Fārābī's works on Galen, as did Ibn Buṭlān,³³ and, according to his commentary of Aristotle's *Rhetoric* he borrowed extensively from al-Fārābī's logic even though he had original ideas of his own.³⁴ Ibn Riḍwān also espoused al-Fārābī's ideal of the attainment of human perfection through the exercise of theoretical virtue, as *Taṭarruq bi-l-ṭibb ilā sabīl al-sa'āda* shows. Interestingly, and in a comment that is rather at odds with the opinion of a philosopher, Ibn Riḍwān says here that the best suited person for attaining ultimate felicity is not the philosopher but the physician, because the latter deals with both theoretical and practical philosophies.³⁵ With this biographical and intellectual background, it is no surprise that Ibn Riḍwān thought that the physicians should learn theoretical matters according to the syllabus established by the philosophers, and that they should have a thorough knowledge of Hippocrates' and Galen's works.³⁶ Ideally identified with the syllabus of the Alexandrian School, Ibn Riḍwān's method was put into practice since we know he trained several students in mathematics, astronomy, logic and the works of Galen, though apparently with little success.³⁷ Ibn al-Qifṭī (d. 1248) is very critical of the scientific knowledge of Ibn Riḍwān and his circle, but overall there is no doubt that Ibn Riḍwān

29 Iskandar (1976: 238); Conrad (1995: 94–5).

30 Conrad (1995: 90): 'Ibn Riḍwān may have believed that his own glosses and commentaries of Galen were rendered less necessary by Ibn al-Ṭayyib's paraphrases'.

31 Reisman (2009: 562 ff.).

32 Ibn Abī Uṣaybi'ah, *Uyūn al-anbā' fī ṭabaqāt al-aṭibbā'* (*Sources of Information on the Classes of Physicians*), 14, ed. Riḍā (1965) 562.

33 Aouad (1997: 172–4).

34 Aouad (1997: 163–245; 1998: 131–60).

35 Ibn Riḍwān, *Maqāla fī al-taṭarruq bi-l-ṭibb ilā sabīl al-sa'āda* (*Treatise on Achieving Happiness through Medicine*), 3, ed. Dietrich (1982) 37–9.

36 Iskandar (1976: 239 ff.).

37 Abū al-Ṣalt al-Dānī, *Risāla Miṣriyya* (*Egyptian Epistle*), ed. Hārūn (1951) 35–6; Ibn al-Qifṭī, *Ta'riḫ al-ḥukamā'* (*History of the Learned Men*), ed. Lippert (1903) 443–4.

made a decisive contribution to fostering interest in Hippocrates and Galen among the Egyptians.³⁸

Ibn Riḍwān wrote several commentaries on Galen's works and on his commentaries of Hippocrates, although he did not gloss all the books included in the *Summaria Alexandrinorum*.³⁹ Some of these works were mere abridgments or collections of notes intended to aid the understanding of Galen and Hippocrates,⁴⁰ in spite of Ibn Riḍwān's criticism of texts of this kind.⁴¹ Other commentaries, however, were more ambitious: the commentary on *Art of Medicine*, for example, had a significant impact on the subsequent development of medicine and became an essential reference for European physicians and scholars from the Middle Ages to the Renaissance.⁴² It is a thorough and very helpful commentary akin to the Alexandrian tradition,⁴³ which glosses Galen's text extensively within the context set by Aristotle's natural philosophy, often with the intention of stressing the common points of the two authors.⁴⁴

One of the main characteristics of this work is its Farabian inspiration, which is apparent in the emphasis laid on logic and method. The first example of this influence is Ibn Riḍwān's definition of medicine in terms of genus and differentia, which is similar to the definition of the *Ortu Scientiarum* attributed to al-Fārābī⁴⁵ and also resembles the definition in *Risāla fī Radd 'alā Jālīnūs* (*Epistle on the Refutation of Galen*):⁴⁶ medicine is an art (*genus*) that draws its principles from natural philosophy and deals with health, disease, and the intermediate state between the two (*differentia*). The second example is one of

38 Some years after Ibn Riḍwān's death, the Egyptian elite was interested in Greek medical sources: a Fatimid minister asked Abū Ja'far Yūsuf ibn Ḥasday to write a commentary on the works of Hippocrates (cf. al-Maqrīzī, *Itti'āz al-ḥunafā'* (*Lessons for the Seekers of Truth*), ed. Shayyāl (1996) III.94).

39 Ibn Abī Uṣaybi'ah, *'Uyūn al-anbā' fī ṭabaqāt al-aṭibbā'* (*Sources of Information on the Classes of Physicians*), 14, ed. Riḍā (1965) 566; cf. Sezgin (1970: 81–7).

40 Ibn Riḍwān's commentaries are largely unstudied, but we do have some editions, translations, and studies of them: Lyons (1963; 1965); Garofalo (2011; 2012). Ibn Riḍwān's commentaries are also quoted in the notes of the editions of the *Galenus Arabus*: cf. Vagelpohl (2014) for *Hipp. Epid. I*, Sālim (1982) for *MMG* and Sālim (1988) for *Ars Med.*

41 Iskandar (1976: 242).

42 It is still unedited; cf. the Juntine edition of Gerard of Cremona's translation into Latin, *Halī filii Rodbon in Parvam Galeni artem commentatio* in Torrigiano (1557).

43 Palmieri (1997: 51–3, *passim*).

44 Cf. Ottosson (1984: 168–9) and Van der Lugt (2011: 18–19), on the problematic of the neutral state of health, which is possible according to Galen but impossible according to Aristotle. Ibn Riḍwān's solution consists of admitting that health and disease may coexist in one and the same body as separable circumstances, like 'water and oil'.

45 Ottosson (1984: 71–2).

46 Cf. n.6 above.

the points that most interested the European scholars. So as to explain the three methods of teaching that Galen mentioned in *Art of Medicine*,⁴⁷ Ibn Riḍwān used Aristotelian logic and construed Galen's categories as types of demonstration. Although the question needs further analysis, it seems relatively clear that Ibn Riḍwān's approach is greatly indebted to al-Fārābī's doctrine of the interconnection between instruction (*ta'lim*) and demonstration (*burhān*) that appears in treatises like *Taḥṣīl al-sa'āda* (*Attainment of Happiness*).⁴⁸ Another aspect which may also be ascribed to the influence of al-Fārābī is Ibn Riḍwān's clear delimitation between the domains of the physician and the philosopher or the lawgiver regarding the health of body and soul.⁴⁹ The Platonic contention that the philosopher – or, better still, the king-philosopher – prescribes treatment for the soul whereas the physician heals the body is directly borrowed from one of the essential texts of al-Fārābī's political philosophy, *Fuṣūl Muntaza'a* (*Selected Chapters*).⁵⁰

2 Galen in Twelfth-Century al-Andalus

Over the course of the ninth and tenth centuries, the Arabic translations of Galen and Hippocrates written in Baghdad gradually arrived in al-Andalus, as Ibn Juljul (d. after 994) outlines in *Ṭabaqāt al-aṭibbā' wa-l-ḥukamā'* (*On the Classes of Physicians and Wise Men*).⁵¹ Galenism was firmly rooted in al-Andalus as early as the first half of the tenth century and expanded in the following century thanks to a significant number of physicians who quoted Hippocrates and Galen extensively in their books. They did not, however, devote themselves to the systematic commentary of Galen,⁵² and only a few of them were remembered for having studied his oeuvre in detail;⁵³ we must wait until the first

47 Edwards (1976: 285ff.); Ottosson (1984: 101–3).

48 Al-Fārābī, *Taḥṣīl al-sa'āda* (*Attainment of Happiness*), ed. Āl Yāsīn (1992) 120–9; cf. Günther (2012: 16–20).

49 Ottosson (1984: 259–60).

50 Al-Fārābī, *al-Fuṣūl al-muntaza'a* (*Selected Chapters*), 3–5, ed. Ramón Guerrero (1992) 110–12.

51 Ibn Juljul, *Ṭabaqāt al-aṭibbā' wa-l-ḥukamā'* (*On the Classes of Physicians and Wise Men*), 2 and 4, ed. Sayyid (1955) 16–21 and 41–50. Ibn Juljul mentions explicitly ten works by Hippocrates and twenty-five by Galen, alongside the *Summaria Alexandrinorum* and other Greek sources.

52 On the Andalusī physicians who transmitted works of Galen during the tenth and eleventh centuries, cf. M. Fierro (2014: nos. 24, 45, 46, 54, 74, 80, 96, 102, and 137).

53 Ṣā'id al-Andalusī, *Ṭabaqāt al-umam*, (*Generations of the Nations*), ed. Bū 'Alwān (1985) 194–8. Ṣā'id mentions four physician-philosophers from Toledo who were active in the

decades of the twelfth century to find a renewed interest in Galen in Saragossa, the cradle of Andalusi philosophy.⁵⁴

Brought up in the highly philosophised environment of this city, Ibn Bājja (d. 1139) was the originator of the process of Aristotelisation that dominated the intellectual life of al-Andalus during the twelfth century.⁵⁵ His main influence was al-Fārābī, in whom he found (besides the key to Aristotle) the principles of his ethical and political thinking and the concern with scientific method. Ibn Bājja espoused the ideal of attaining perfection through the theoretical life and learned the rational sciences according to the order set out in the classifications of the sciences. While he earned his living as a physician,⁵⁶ he pursued a philosophical programme that also followed this order. At the beginning he extensively glossed al-Fārābī's logical treatises; then, he commented on Aristotle's natural philosophy, and finally he wrote his more personal works, which dealt with ethics, psychology, and noetics.⁵⁷ During the second period,⁵⁸ he wrote the commentaries on Galen and the super-commentaries on Galen's commentary on Hippocrates. These six commentaries, most of which are preserved in incomplete form in a single manuscript,⁵⁹ seem to be propaedeutic in nature: two are epistemological texts,⁶⁰ three deal with the principles of natural philosophy,⁶¹ and only one addresses a medical issue.⁶² In the methodological commentaries, Ibn Bājja's main purpose is not to explain Galen or Hippocrates but to introduce his audience and readership to al-Fārābī's con-

eleventh century: Ibn al-Baghūnīsh, Ibn Wāfīd, Ibn 'Asākir, and Ibn Khamīs. There may have been more; Šā'id was able to meet the physicians mentioned in person, in Toledo, and so he knew them better than other physicians living elsewhere in al-Andalus.

54 Forcada (2011a: 219–36).

55 For a general and recent overview of Ibn Bājja's life, works and thought, cf. Puig Montada (2007) and Lomba Fuentes and Puerta Vélchez (2009).

56 On Ibn Bājja as a physician, cf. Forcada (2011b: 111–13).

57 Al-'Alawī (1983: 156–66).

58 Forcada (2011b: 118).

59 Al-'Alawī (1983: 92–4). Although Ibn Bājja's commentaries are fairly original, it is possible that *Sharḥ fi al-Fuṣūl* was influenced by Ibn Abi Šādiq's commentary on Hippocrates' *Aphorisms* (cf. Forcada, 2011b: 120, *passim*).

60 Ibn Bājja, *Sharḥ fi al-Fuṣūl* (*Commentary of the 'Aphorisms'*, a commentary on Galen's commentary on Hippocrates' *Aphorisms*), ed. Forcada (2011a) appendix, 373–94; *Ta'ālīq fi al-adwiyat al-mufrada* (*Notes on Simple Drugs*, a commentary on Galen's *On the Capacities of Simple Drugs*), ed. Forcada and Loinaz (2014).

61 Ibn Bājja, *al-Qawl fi al-uṣṭuqūsāt* (*Discourse on Elements*); Ibn Bājja, *al-Qawl fi al-mizāj* (*Discourse on Mixtures*).

62 Ibn Bājja, *Maqāla fi al-ḥummayat* (*Chapter on Fevers*). The work does not mention Galen's *Diff. Feb.*, although it is based on it. It is a summarised explanation of what fevers are, addressed to someone who is interested in putrid fever.

ception of medicine and to the elements of al-Fārābī's logic which he thinks that a physician should know. Hence, Hippocrates' most famous first aphorism is used to introduce al-Fārābī's conception of medicine as operative art and the three-tier division of medicine mentioned above, and to classify several works by Hippocrates according to this division.⁶³

The key issue in the work is the meaning of *tajriba*, 'experience'. Ibn Bājja distinguishes between a simple experience provided by the senses and a qualified experience, which consists of al-Fārābī's identification of *tajriba* with *epagōgē*, the inductive process described in Aristotle's *Posterior Analytics* (11.19), which yields first principles for a demonstrative syllogism. Against this, Ibn Bājja encourages physicians to be more proactive in the empirical research that will lead eventually to true science and says that medicine should be, as far as possible, a deductive discipline. *Ta'ālīq fī al-adwiyat al-mufrada* (*Notes on Simple Drugs*) addresses what might be called the 'philosophy of pharmacy', which consists of explaining and discussing the methodological aspects of Galen's *On the Capacities of Simple Drugs* with the words and concepts of al-Fārābī.⁶⁴ Since the purpose of the 'art that deals with simple medicines' is to connect the characteristics of a substance to certain therapeutic effects, Ibn Bājja discusses three methods for achieving this purpose: the methods of Dioscorides, Galen, and his own. Although the text is inopportunistically interrupted just before the author begins his comparison of these methods, the preliminary sections suggest that logic was the crux of the discussion: to what extent, and under what conditions, are the logical connections between premises and conclusions valid? Ibn Bājja thus echoes the problem of the inconsistency of Galen's deductions raised by al-Fārābī.⁶⁵ The commentaries on natural philosophy explain the Hippocratic-Galenic texts on the basis of the Aristotelian sources that Ibn Bājja knows well like *Physics*, *Meteorology*, or *Generation and Corruption*, in much the same way as Ibn Rushd will do in *K. al-Kullīyyāt* as we will see below. The major doctrinal differences appear in treatises like the commentary of Aristotle's *Generation of Animals*, where Ibn Bājja, against Galen, follows Aristotle in the belief that only the male's semen contributes decisively to the conception of an embryo.⁶⁶

63 Ibn Bājja, *Sharḥ fī al-Fuṣūl* (*Commentary of the 'Aphorisms'*), ed. Forcada (2011a), appendix 375–6; cf. Forcada (2011b: 123–6).

64 Forcada and Loinaz (2014: 37ff). Ibn Bājja says that the aim of the work is to teach the physicians of his time 'as much logic as they can accept' (*Ta'ālīq fī al-adwiyat al-mufrada* (*Notes on Simple Drugs*), ed. Forcada and Loinaz (2014) 104.

65 For a summary of this issue, cf. Richter-Bernburg (1995: 93–5) and the bibliography quoted here, especially Zimmermann (1976: 401–14).

66 Kruk (1997: 171–5); Forcada (2011b: 141–2).

Even though Ibn Bājja's audience was small, his Farabian approach to medicine was transmitted to the following generations, along with the rest of his philosophical and scientific legacy. Philosophy and the sciences were able to flourish from the mid twelfth century onwards because the Almohad state favoured rationalism.⁶⁷ Hence, scholars such as Ibn Ṭufayl (d. 1185)⁶⁸ and Ibn Rushd, who can be considered as indirect disciples of Ibn Bājja,⁶⁹ were not only court physicians of the Almohads but were also important courtiers who were able to pursue careers as philosophers in spite of certain obstacles.⁷⁰ Ibn Ṭufayl and Ibn Rushd led the Almohad medical services, which seem to have been a complex and hierarchically arranged structure where the discipline of medicine was taught. In this setting, the caliph, advised by Ibn Ṭufayl and another philosopher, asked Ibn Rushd to write a treatise on the theoretical principles of medicine⁷¹ in consonance with the Farabian view that the physician was a practitioner who nevertheless had to know certain theoretical bases.⁷² As a result, Ibn Rushd wrote *Kitāb al-Kullīyyāt fī al-ṭibb* (*Book About the 'Universals' of Medicine*), a handbook on the theoretical part of medicine planned on the basis of al-Fārābī's definition and structuring of the discipline.⁷³ Supplemented by Abū Marwān Ibn Zuhr's (d. 1162) *Kitāb al-Taysīr fī al-mudāwāt wa al-tadbīr* (*Book Opening the Path to Therapeutics and Diet*), *Kitāb al-Kullīyyāt* (*Book About the 'Universals'*) was probably intended for the education of the physicians who followed the Almohad physician-philosophers.⁷⁴ Ibn Rushd's handbook modified the standard presentation of medicine of Arabic handbooks and arranged it according to the Aristotelian principle of the four causes,⁷⁵ which are included in al-Fārābī's three-tier and seven-tier divisions of the discipline. Since Aristotle was deemed to be the superior authority in philosophy, Galen was carefully scrutinised and his deviations from orthodoxy at both the

67 Akasoy (2012: 332–5).

68 It is worth noting that the biological principles that Ibn Ṭufayl employs in his famous *Risāla Ḥayy ibn Yaqẓān* (*Philosophus Autodidactus*) are mainly borrowed from Aristotle and not from Galen (cf. Richter-Bernburg, 1995: 99ff).

69 Although Maimonides is out of the scope of this chapter, it is worth noting that he was also an indirect disciple of Ibn Bājja.

70 For a summary of Almohad science and its connection to the dynasty, cf. Forcada (2005).

71 Urvoy (1998: 106).

72 On al-Fārābī's influence on Ibn Ṭufayl, cf. Richter-Bernburg (1995: 93–4).

73 Forcada (2011a: 96–97, 328 ff.).

74 It is also possible that the union of these two books was conceived as an alternative to Ibn Sīnā's *Canon* (cf. Arnaldez and Iskandar, 1976: 7).

75 Torre (1974: 42–5); Cruz Hernández (1997: 258–9).

methodological⁷⁶ and doctrinal level were criticised.⁷⁷ Ibn Rushd discussed in great detail questions such as the voluntary or involuntary nature of breathing, cardiocentrism, or encephalocentrism, the number and nature of human complexions,⁷⁸ and even the admissibility of astrology in medicine,⁷⁹ usually resolving in favour of Aristotle.

Ibn Rushd maintained this line of thinking throughout his life. This is reflected in two works written in his maturity: first, his commentary of Ibn Sīnā's *Medical Poem* (usually known by the abridged title *Sharḥ Urjūzat Ibn Sīnā fī al-ṭibb*) in which he nuances some of the opinions expounded in *Kitāb al-Kullīyyāt*,⁸⁰ but still maintains his Aristotelianism against Galen; and second the collection of Galenic commentaries written in the last years of his life. Although it is difficult to say whether they were written in the same era, at least two of these latter commentaries date from the 1190s and all of them show a consistent unity of style defined by the technique of the *talkhīṣ*, that is, a paraphrase of the source nuanced by Ibn Rushd's own opinion.⁸¹ According to the commentary on *On Mixtures*,⁸² Ibn Rushd's sons proposed that he should write this work for didactic purposes and it is possible that the other commentaries were also written with the same aim in mind, and were thus works addressed to a small audience. The Galenic commentaries did not add very much to what Ibn Rushd had said in *Kullīyyāt* and had little impact on posterity. In contrast, *Kitāb al-Kullīyyāt* became a book of considerable repute and that was object of much debate among the European physicians of the Middle Ages and the

76 Bürgel (1967: 311–14).

77 For a list of the most controversial points, cf. Bürgel (1967: 290–7). In fact, Galen's opinions were not the only ones to be debated; Ibn Sīnā's *Canon* also came in for censure from Ibn Rushd.

78 Although the list of references may be longer; cf. Bürgel (1967). On breathing: Baffioni (2004: 149–74; 2011: 109–24); on the conception of the embryo: Torre (1974: 151–5, 182–4); Ottosson (1984: 220 ff); on cardiocentrism: Ottosson (1984: 129 ff); Gätje (1982: 243–68) on complexions.

79 This is an indirect criticism that appears in Ibn Rushd's *Sharḥ Urjūzat Ibn Sīnā fī al-ṭibb* (*Commentary of Ibn Sīnā's Medical Poem*), 1, ed. Coullaut Cordero et al. (2010) 246. Ibn Rushd criticises Ibn Sīnā for accepting Galen's astrological treatment of the critical days.

80 Cf. the problem of complexions addressed by Ibn Rushd in *Kullīyyāt* (*Universals*), 2, ed. Jābirī (2008) 161–8 and 213–14; and in *Sharḥ Urjūzat Ibn Sīnā fī al-ṭibb* (*Commentary of Ibn Sīnā's Medical Poem*), 1, ed. Coullaut et al. (2010) 54 ff. In this latter work he still criticises Galen and Ibn Sīnā for their belief in a completely balanced complexion, but he forgets the odd fifth complexion that he mentioned in *Kullīyyāt* (*Universals*).

81 For a full list of Ibn Rushd's commentaries of Galen, cf. Cruz Hernandez (1998: 50–1). The extant commentaries have been edited by Vázquez de Benito (1984).

82 Ibn Rushd, *Talkhīṣ al-mizāj* (*Commentary on Mixtures*), 1, ed. Vázquez de Benito (1984) 94.

Renaissance. Ibn Rushd's Aristotelianism, however, was also overshadowed by Galen and the Galenism of the *Canon* in Europe and the Muslim world.

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Maimonides and Galen

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Maimonides (d. 1204) studied the Galenic corpus closely. He prepared abbreviated versions of the sixteen books that formed the ‘core curriculum’ of Galenic studies. These were literal extracts, preserving Galen’s own words (but in Arabic, of course).¹ *Fuṣūl Mūsā*, usually translated as Maimonides’ own *Aphorisms* but actually constituting, as Maimonides explains in the preface, personal notebooks that he edited late in life, is almost entirely based on Galen.² For *Fuṣūl Mūsā* he drew upon the entire Galenic corpus, allowing himself to paraphrase Galen and to supplement the master’s remarks with some of his own. Some of his citations are the only ones available in any form, for example, *De voce et hanelitu*, cited in 23.76.³ Maimonides also inspected more than one copy of Galenic works and thus noticed some accretions that are not by Galen.⁴ Maimonides’ commentary on Hippocrates’ *Aphorisms* engages Galen’s commentary on it throughout. Galen figures prominently in Maimonides’ medical monographs and, to a lesser extent, in his magnum opus on Jewish thought, the *Guide of the Perplexed* (*Moreh Nevukhim*). Surveying Maimonides’ extensive use of the Galenic corpus is one way to appreciate Galen’s impact on Maimonides.

1 On these extracts, and the notes that Maimonides occasionally added to them, see Langermann (1993).

2 This relatively massive book is being published as part of Gerrit Bos’ project to reproduce editions and translations of all of Maimonides’ medical writings. To date, four volumes have appeared, published in 2004, 2007, 2010, and 2015. The final volume containing book 25, which is the primary source for this chapter, appeared as this chapter was in the editing stage (2017). I thank Professor Bos for sharing proofs of an advanced draft of that volume with me. On Galen’s place in book 25, see Bos (2002). Concerning Maimonides’ method in compiling these notebooks and their relationship to other writings of his, see Langermann (2008). See also Caballero-Navas (Chapter 27) in this volume, who provides an overview of the Galenic works cited in Maimonides’ *Fuṣūl Mūsā*.

3 Maimonides, *Fuṣūl Mūsā*, 23.76, ed. Bos (2017) 56. This Galenic work is considered spurious by some scholars; see Fichtner (2017: no. 358).

4 In *Fuṣūl Mūsā*, 24.1–2, ed. Bos (2017) 74, he notes an addition to Hippocrates’ *On Women’s Diseases* that ‘is not part of Ḥunayn’s translation or Galen’s commentary’ and ascribes to Porphyry a remark on the effect a solar eclipse had on pregnant women.

Were one to ask not simply what Maimonides learned from Galen, but what he thought of the man, the answer is not hard to find. Maimonides' assessment of the man is part intellectual portrait and part medical or psychological analysis. Galen, Maimonides held, was indeed a great thinker, possessed of a critical mind. He overextended himself, however, in pontificating on a variety of subjects that lay far beyond his expertise. In particular, Maimonides took offense at Galen's attitude towards the biblical Moses and 'Mosaic' – that is, Jewish – teachings.

In the final book of *Fuṣūl Mūsā*, Maimonides presents Galen as a classic example of someone possessing a psychic 'malady' that affects just about everyone but is particularly severe when it befalls someone who has legitimately achieved success in one of the fields of knowledge. This malady deceives the person into thinking that he is expert in all other fields no less than he is in his specialty. Maimonides' sketch contains much praise but also some stinging criticisms:

And this [man] Galen, the physician, was attacked by this disease in the same degree as others who were equal to him in science. That is, this man was very, very proficient in medicine, more than anybody that we have heard about or whose words we have seen; he has achieved great things in [the field of] anatomy, and things became clear to him – and to others in his time as well – about the functions of the organs, their usefulness and structure, and about the different conditions of the pulse, which were not clear in Aristotle's time. He, I mean Galen, has undoubtedly trained himself in mathematics and has studied logic and the books of Aristotle on the natural and divine sciences, but he is defective in all of that. His excellent intellect and acumen that he directed towards medicine ... have induced him to speak about things in which he is very deficient and about which the experts have contradictory opinions.

He refutes, as you know, Aristotle in logic and speaks about the natural and divine sciences, as he does [in] *On My Own Opinions*, and [in] *On the Doctrines of Hippocrates and Plato*, and [in] the book *On Semen*, which contains refutations of Aristotle. Likewise, he composed a book on motion, time, the possible, and the first mover, and about all these things he comes with opinions that are well known to the people of that branch. This led to the point where he composed his famous *On Demonstration* and maintained that the physician is not perfect in medicine unless he knows [this book] ... But the syllogisms that he mentioned are not at all the demonstrative syllogisms, and he omitted those syllogisms that are

very useful in the medical art and claimed that they are not at all useful and that Aristotle's and other people's study of them is a waste of time.⁵

Maimonides informs that 'all this' has been explained already by Abū Naṣr al-Fārābī. I am not sure if this critique in its entirety is taken from al-Fārābī, and if so, from which of his books. It is clear, however, that the criticism of Galen on matters of logic is, indeed, borrowed from al-Fārābī. Maimonides cites verbatim from a lost portion of al-Fārābī's commentary on *Prior Analytics*. The omitted syllogisms are hypothetical (*mumkina*) or mixed (*mukhtalaṭa*),⁶ and they happen to be the only syllogisms of use to medicine. Galen's delusion that his undisputed skill in medicine granted him equal skill in logic as well led him to omit them. Galen did not stop here. He took such pleasure in his discoveries concerning the usefulness of organs that 'he pretended to be a prophet and said that an angel came to him from God and taught him such and such and ordered him such and such'.⁷ He went even further, positioning himself equal to not just any prophet, but to Moses. In fact, he took himself to be superior to Moses. This chapter is devoted primarily to this Galenic diatribe and Maimonides' response.

The highly critical assessment of Galen as a philosopher found in the *Fuṣūl Mūsā* is not what one might have expected after reading Maimonides' *Guide*. Galen is mentioned in the *Guide* only a few times, but the paucity of references itself does not mean much, as Maimonides is generally reticent with regard to citing authorities by name in that book. The few references to Galen are, however, all positive. Shlomo Pines takes note of Galen's considerable and 'subversive' influence on Arabic philosophy, mainly by inspiring scepticism towards Aristotle.⁸ Galen's remarks are indeed helpful at times for Maimonides' attempts to undermine Aristotle, especially with regard to the eternity of the universe. Pines, it appears, underestimates Galen's impact on Maimonides, as Galen's views lurk behind not a few of Maimonides' ideas concerning creation.

5 Maimonides, *Fuṣūl Mūsā*, 25.59, ed. and tr. Bos (2017) 169–72. Maimonides proceeds to quote at length from Abū Naṣr al-Fārābī's great commentary on Aristotle's *Prior Analytics*, where this point is explained. Davidson (2005: 114 n.190) was not able to locate the passage in the text of al-Fārābī available to him.

6 These are distinctive Farabian terminologies. 'Mixed' forms of argumentation combine Aristotelian and Stoic methods of reasoning. See Lameer (1994: 44, and the chart on page 41). 'Possible' is used to signify problematic deductions from modal syllogisms; see Lameer (1994: 60).

7 Maimonides, *Fuṣūl Mūsā*, 25.61 ed. and tr. Bos (2017) 175–6.

8 Pines, (1963b: lxxvii). Pines observes further that Maimonides does not defend Galen, even though he might have been regarded as a 'respectable ally'.

In the *Guide*, Galen is included among ‘the cleverest philosophers’ who ‘were confused by the question of time ... some of them did not understand its notion – so that Galen could say that it is a divine thing, the true reality of which cannot be perceived’.⁹ Bear in mind, the underlying theme of Maimonides’ criticism of Galen in the *Fuṣūl Mūsā* is his pride in thinking that his acknowledged expertise in medicine grants him expertise in all other matters. Maimonides valued modesty and caution in delicate investigations. From his point of view, Galen’s purported admission that ‘the true reality’ of time cannot be perceived is highly praiseworthy. Did Galen, however, say anything of the sort?

In some places, Galen looks to have held a clear notion of time – clear to himself, that is, though not necessarily to the world of scholarship.¹⁰ The evidence is often indirect, indeed by way of philosophical opponents. In an often cited philosophical correspondence from the tenth century, Galen claims to agree with Plato that time is a substance.¹¹ On the other hand, his criticism of Aristotle’s definition of time, reported by Themistios and Simplicios, lends itself more readily to the sceptical tone of the statement cited by Maimonides. Galen criticises Aristotle because calling time the measure of motion does not encompass the nature of time in itself and mistakenly connects it to concomitant phenomena. Apparently, Galen maintains that time is not connected to spatial motion by its own nature. It is the object of a sort of ‘primitive’ evidence, which is self-revealing and has no need for definition. As Themistios and Simplicios report in their commentaries of *On Physics*, Galen pointed out that Aristotle, who aims to define time, actually provides nothing more than a tautological definition:

We must not align ourselves with Galen in his belief that time is separately defined through itself. For after fully listing numerous significations of ‘before’ and ‘after’, he says that none coincide with the definition [of time] except the one in respect of time, so that time is [defined as] ‘the number of changes in respect of time’.¹²

The specific statement that Maimonides ascribes to Galen is not found here. We have, of course, not Galen’s texts, but reports from his adversaries. It is not

9 Maimonides, *The Guide of the Perplexed*, 1.73, tr. Pines (1963a) 196–7.

10 On Galen’s theory of time, see Chiaradonna (2009).

11 Sorabji (1983: 82), quoting Pines (1955).

12 The citation (from Themistios, *Phys.* 149.4–7 Schenkl, tr. Todd, 2003: 60) and the preceding discussion are taken from Chiaradonna (2009: 250).

difficult, however, to reconcile the remark attributed to Galen with the views reported here. Time can be defined only temporally, that is, with reference to itself. This makes it as elusive a concept as divinity.

The anti-Aristotelian character of Galen's discussion is notable. One can readily see that Maimonides would find in Galen's analysis a weak point in the Aristotelian system, especially with regard to the issue of creation. It seems that here and elsewhere, Maimonides was able to draw upon Galen for helpful insights and arguments, even though he surely was aware that Galen did not support 'Mosaic' creation, miracles, and other features of Maimonides' system.

Another reference to Galen, in the *Guide* (2.15), most likely traces back to the same discussion of time and creation in Galen's *On Demonstration*. It concerns a passage from al-Fārābī in which al-Fārābī berates Galen. In defending creationism, Maimonides all along argues that he is not contradicting anything explicit in Aristotle, since the Stagirite never claimed to know of a demonstration confirming that the cosmos is eternal, even though that was the opinion that he leaned towards or accepted. Maimonides cites a passage from Aristotle's *Topics* that seemingly presents the eternity of the world as a question whose resolution is difficult, and then he adduces al-Fārābī's interpretation of the passage. Maimonides wrote:

However, you know Abū Naṣr [al-Fārābī's] interpretation of this example, what he made clear with regard to it, as well as the fact that he considered disgraceful the notion Aristotle could have doubted the eternity of the world. He had an extreme contempt for Galen because of the latter's saying that this was an obscure question with regard to which no demonstration is known. As Abū Naṣr holds, it is clear and manifest, being proved by demonstration, that the heavens are eternal whereas that which is within them is subject to generation and passing-away.¹³

Al-Fārābī may have understood Galen as saying that Aristotle had doubts about the eternity of the world.¹⁴ As I understand al-Fārābī, the problem was to find a single proof that would establish the eternity of cosmos in its entirety. Aristotle knew that no single demonstration could be found. By breaking the cosmos into two components, the heavens and the sublunar sphere, however,

13 Maimonides, *The Guide of the Perplexed*, 2.15, tr. Pines (1963a) 292. In my opinion, *shinā'a*, rendered by Pines 'disgraceful', would be better translated as 'absurd'.

14 On this commentary by al-Fārābī, see Galston (1977). Al-Fārābī's commentary has since been published twice. That of al-'Ajam (1986: 82) was consulted here. See also Zonta (2011).

he clearly could and did demonstrate, as Maimonides sums it up, 'that the heavens are eternal whereas that which is within them is subject to generation and passing-away'. Generation and passing away are processes with neither beginning nor end.

As Chiaradonna explains, Galen's own position was 'that the claim "everything which comes into being passes away" is neither a scientific nor a necessary truth, but can at most be regarded as plausible'.¹⁵ Interestingly enough, al-Fārābī says that, according to Galen, the issue of the world's generation in time 'is one of the things that one becomes perplexed about', *yataḥayyir fihi* – using the same root that Maimonides adopted for the title *Guide for the Perplexed*. Indeed, Galen 'often mentions the problem of knowing whether the world was created or not among the questions of speculative philosophy that exceed the limits of human knowledge and do not admit any demonstrative solution'.¹⁶

Galen also maintained that imperishable things may have a beginning in time. Though it is true that that which does not come into being is imperishable, the converse need not hold: imperishable entities may have come into being.¹⁷ Maimonides' position that the cosmos need not cease to exist, elaborated in the *Guide* (2.27), may be a twist on Galen's approach. The asymmetry he argues for is different: only those things that come into being 'according to the natural order' must perish. Since the cosmos was brought into being by the will of God, it can last forever.

Against Aristotle, who asserts that the cosmos as it currently presents itself, always had been and always will be, Maimonides argues, '[A] being's state of perfection and completion furnishes no indication of the state of that being preceding its perfection'.¹⁸ In other words, one cannot infer from the present state of the cosmos that it did not undergo a process of generation. This idea may also be a take on one of Galen's doubts. Galen also holds that the evidence from humankind's experience of the cosmos suggests that it does not change. Nonetheless, he reasons, one cannot infer from this that the cosmos was not generated.¹⁹

Maimonides' longest and most intense engagement with Galen is his response to Galen's polemical excursus in book 11 of *On the Function of the Parts of the Body*.²⁰ After describing the usefulness of the eyebrows and eyelashes,

15 Chiaradonna (2009: 248).

16 Chiaradonna (2009: 245).

17 Chiaradonna (2009: 245).

18 Maimonides, *The Guide of the Perplexed*, 2.17, tr. Pines (1963a) 297–8.

19 Chiaradonna (2009: 248).

20 Galen, *UP*, 11.14, ed. Kühn (1822) 111.907.3ff. = ed. Helmreich (1909) 11.159.17ff.

especially the precise lengths to which they grow, Galen embarks on a long and critical comparison between his own conception of the wisdom of the Demiurge – he sees himself aligned with ‘the philosophers’ on this – and that of the biblical Moses. These remarks raise Maimonides’ ire. A number of important issues are intertwined here, notably the care or providence exercised by the supreme being, the fixity of nature, and the related topics of creation and miracles. Moreover, some of Maimonides’ comments have bearing on opinions he voices in the *Guide* on matters of biology, divine justice, and the nature of evil. As such, they prove useful in ascertaining his views on those issues.

Trying to sort all of this out is difficult enough, but the task is further complicated by two factors. First, some nuances (if not more) of Galen’s exposition are lost, or have been altered, in their Arabic instantiations. Second, it is not precisely clear where and how Maimonides’ response fits into his intellectual biography and the development of his positions on the issue in question. In this respect, it is of paramount importance to note that book 25 of his *Fuṣūl Mūsā*, which contains his engagement with Galen, was released posthumously, probably by his nephew.²¹ Given the nature of his *Fuṣūl Mūsā* – notes compiled over the course of a career in medicine – Maimonides’ critique of Galen may well have been written, at least in part, even before he finished the *Guide*. Exactly when he penned it is not known. Maimonides corrected the first twenty-four books before releasing them to the public. There can be no doubt that had he lived long enough, he would have made some refinements to the critique of Galen as well.

Of particular note, Maimonides makes a strange cross reference to a discussion of his concerning *uṣūl al-dīn*, literally the ‘roots’ or ‘principles’ of religion.²² No extant work by him matches this precisely. At some point in his career, Maimonides may have contemplated writing a treatise on that topic, or alternatively, regarded one of his works (completed or in progress) as fitting that designation. To what might he be referring, and how does it bear on the discussion?

Galen’s attacks were very sharp, and Maimonides was not the only one who felt the need to respond. Charles Daremberg was moved to write two critical notes to his French translation of Galen’s work, and Margaret May seconds Daremberg in one of the few notes to her English version.²³ No doubt, polemics aside, Maimonides and Galen hold different views on a number of key

21 This is noted in the colophon to MS Gotha or. 1937, fol. 237a. See Bos (2017: xxxi–xxxii).

22 See below p. 257.

23 Daremberg (1854: 687–8 nn.1 and 2); May (1968: 533).

issues, but a number of interesting points of agreement also emerge from an inspection of the texts. Maimonides wrote:

Do you say, then, that the Creator has commanded this hair to remain at all times at one and the same length and not to grow longer, and that hair has accepted that order, obeyed, and remained [at the same length], without deviating from what it had been ordered, either out of fear and apprehension to offend against the command of God or because of politeness and awe before God, who gave this command, or that the hair itself knows that it is more appropriate and better to do so? This is the opinion of Moses about the natural things, and I think that this opinion is better and more appropriate to be adopted than that of Epicurus, even though the best thing is to refrain from both and to maintain that God, may He be exalted, is the principle (*mabda*) of the creation of all created things as Moses – peace be upon him – has said, but add to this the material principle (*al-mabda*’ *allādhī min qabli al-mādda*) from which they were created.²⁴

Just what is this ‘material principle’, and how has it been ‘added’? It is fairly evident, from both the Arabic and Greek, that Galen supports the notion of uncreated matter – here *hylē* in Greek, *mādda* in Arabic – out of which the Demiurge fashions all ‘created’ beings. ‘Principle’ would mean here coeval sources, the one for the stuff out of which things are made, the other for the design so apparent in the way things have been made out of this matter. Clearly, Maimonides sees Galen’s denial of creation out of utter non-being to be the crux of their disagreement. But if one goes along with Daremberg,²⁵ who observes that the real difference between Galen and the biblical Moses is that for the former, the laws of matter are ‘anterior and superior’, to God, thus in effect putting constraints on divine omnipotence, one may come away with a somewhat different perspective. Maimonides cannot agree that the laws of matter are ‘anterior and superior’ but even for a creationist like himself, there is ‘principle of matter’ which, if not formally restraining God’s ability to fashion matter in any way that he chooses, does put limits on the design in creation – limits with very severe implications for theodicy and providence. This brings to mind the irreducible element of chaos inherent in matter, the chaos that Plato’s Demiurge could not fully tame. This chaotic aspect is found

24 Maimonides, *Fuṣūl Mūsā*, 25.62, ed. and tr. Bos (2017) 177–8.

25 Daremberg (1854: 687, n.1).

in Aristotle's biology, and Maimonides definitely accepts it. It is an important feature of his theodicy.

Maimonides' concurrence with Galen, both on matters of design as well as on the irreducible chaotic aspect of matter, emerges from the *Guide* (3.12), where Maimonides corrects the error, expounded most notoriously by the physician Abū Bakr al-Rāzī, that there is more evil in the world than good. There are several sides to Maimonides' response. He asserts that in many or most cases, the 'evil' that people perceive is really an expression of frustration at not getting what they think they deserve; people tend to grossly overestimate just how much good they ought to receive. In Maimonides' words, 'And if something happens to him [a given person] that is contrary to what he wishes, he makes the trenchant judgment that all that exists is an evil'.²⁶ People bring much evil upon themselves, for example, by not eating properly.

Not all evil, however, can be dismissed as mere misguided expectation or as the result of faulty behaviour. Some instances, for example genetic (to use an anachronism) deformities, demand a different explanation. Here Maimonides appeals to Galen, citing a passage from *On the Function of the Parts of the Body*:

Do not set your mind on the vain thought that it is possible that out of menstrual blood and sperm there should be generated a living being that does not die, is not subject to pain, is in perpetual motion, or is as brilliant as the sun.²⁷

According to Maimonides, Galen is describing a particular instance of this general proposition:

Everything that is capable of being generated from any matter whatever, is generated in the most perfect way in which it is possible to be generated out of that specific matter; the deficiency attaining the individuals of the species corresponds to the deficiency of the particular matter of the individual.²⁸

Galen, though, is not talking about chance deficiencies in individuals. Indeed, congenital deformities were not much of an issue among Hellenistic thinkers.²⁹

²⁶ Maimonides, *The Guide of the Perplexed*, 3.12, tr. Pines (1963a) 442.

²⁷ Galen, *UP*, 3.1, ed. Kühn (1822) 111.238.11–14 = Helmreich (1907) 1.175.3–7. I cite the translation in Pines (1963a: 444).

²⁸ Maimonides, *The Guide of the Perplexed*, 3.12, tr. Pines (1963a) 444.

²⁹ For Aristotle's treatment of deformities, which run the gallant from monstrosities to women, who are deformed in that they are not endowed with the rational faculties given to men, see Katayama (2008).

He is rather justifying the calloused soles of human feet, which, even if not aesthetically pleasing, serve a useful purpose when we walk. Galen praises the design of the muscles in the foot, and especially the particular type of skin that covers the sole, the design that is found in well-formed individuals. He lambasts those who find it evil that the human body was not designed in a manner that seems to them more appropriate.

Maimonides, though, takes the argument in a different direction. He wishes to rebut not the purported evil in the well-formed human, but the more troubling evil manifest in the defective one. His argument generally follows that of Galen, save the final sentence: '[T]he deficiency attaining the individuals of the species corresponds to the deficiency of the particular matter of the individual'. He concludes shortly thereafter, 'Thus this species of evil must necessarily exist'. 'This species', that is, the evil that results in the chance allocation to a given embryo of defective matter, as noted, 'befalls man because of the nature of coming-to-be and passing-away, I mean to say his being endowed with matter'.³⁰ It comprises 'infirmities and paralytic afflictions', which are due either to an 'original natural disposition' (*'aṣl al-jibla*) or 'changes occurring in the elements, such as corruption of the air or thunderbolts and a landslide'.³¹ The former will affect only a few individuals, seemingly by chance; the latter befall all who are the affected region, as an inevitable concomitant of their being composed of the terrestrial elements.³² Both are attendant to being compound material, in a fashion that is intractable and recalcitrant.

Maimonides deals with further general disasters later in the *Guide*, in his discussion of divine providence, but it is not of concern here. With regard to inherent defects in the material composition of a particular individual, Maimonides does not even consider the option – which many a 'religious' mind begs to be considered, if not adopted – that the same design which went into the human eye, and even into appurtenances, such as the eyebrows, should also have seen to it that all human embryos should have at the very least a complete and functioning physical constitution. It seems that from Maimonides' point of view, the exigencies of matter exclude that possibility. There is something of the necessity inherent in the nature of matter that requires it to rearrange from time to time, with no evident purpose, in the form of congenital defects.

30 Maimonides, *The Guide of the Perplexed*, 3.12, tr. Pines (1963a) 444.

31 Maimonides, *The Guide of the Perplexed*, 3.12, tr. Pines (1963a) 443. 'Corruption of the air', hence 'malaria', was a standard explanation for a pandemic. I modify Pines' translation of *ṣawā'iq*, 'thunderbolts', rather than 'fire from heaven'.

32 In line with this, Maimonides guarantees good health to all who follow the regimen set down in his great law code (*Mishneh Torah*, *Hilkhot De'ot* 4.20), barring large-scale disasters, such as pandemics, against which Maimonides knows no defence.

Divine wisdom and divine decree, design and randomness, call them what you will, trace back to reason and necessity, the pair of principles expounded by Plato in his *Timaeus*.³³ This pair of concepts, so fundamental to Maimonides' worldview, illustrate a 'contradiction' that is a real feature of the universe, not a literary mask to avoid persecution. Maimonides may well have adopted them by way of Aristotle, who incorporated them into his philosophy of biology.³⁴ Necessity includes the behaviour of matter, which is at times necessarily chaotic. These two principles lie at the heart of Maimonides' remarks on human biology in the *Guide* (1.72). He notes that some parts of the body are 'intended' – exist for a purpose – and others 'are not intended for themselves but are connected, and consequent upon, the composition of the parts of the body, that particular composition being necessary for the achievement of the form in question as it is, so that it should carry out the intended actions'. Hair and skin colour belong to this second category. Because they are not 'intended' in and of themselves; they are not orderly and are frequently lacking; and they vary greatly from individual to individual. They are disorderly 'because of the necessity inherent in matter (*darūriyyat al-mādda*)'.³⁵

Returning to *On the Function of the Parts of the Body*, Galen wrote:

Our creator has made the eyelashes and eyebrows feel the necessity of remaining at one and the same length since this was more appropriate and better. And since He knew that it was necessary to make them so, he placed under the eyelashes a hard body similar to cartilage which extends along the eyelid, and spread under the eyebrows a hard skin adherent to the cartilage [i.e. the superficial fascia] of the eyebrows. And this because [otherwise] it would not have been sufficient in order to retain this hair in one and the same length that the Creator would have wished it to be so. In the same way, if he would wish to turn a man into a stone all of a sudden, without making the stone undergo the appropriate alteration, this would not be possible.

33 On divine rationality and necessity in Plato's biology, see Steel (2001).

34 Balme (1987: 17) remarks that the opening sections of Aristotle's *Parts of Animals* recall *Timaeus* 76a–d and the 'dual causation by the good and the necessary'.

35 Pines (1963a: 188). None of the translators of the *Guide* note Maimonides' source here. He probably had in mind *Generation of Animals* 786b4–5, where it is stated that hair and skin color are due to residues. I have no idea as yet how this came across in the Arabic version that he would have read. It is not in the zoological compilation ascribed to Maimonides but of questionable authenticity, published by Mattock (1966). As Mattock remarks, that text is almost completely devoid of philosophical or theoretical materials.

The difference between the belief of Moses – peace be upon him – and our belief and that of Plato and the other Greeks is the following: Moses claims that it is sufficient that God wishes to give shape and form to the matter in order to let it take shape and form instantly. This is because he thinks that all things are possible with God, and that if He wishes to create a horse or an ox from ashes instantly, He can do so. But we do not approve of this, but say that there are some things which are impossible in themselves and these God never wishes to occur, but he wishes only possible things to occur, and from the possible [things] he chooses only the best, and the most appropriate and excellent.³⁶

Both Galen's Demiurge and the God of Moses want the eyelashes and eyebrows to retain their optimal lengths. The Demiurge is constrained insofar as his will is not enough; hence, the proper cartilage must be provided as well.³⁷ Galen adds mockingly, however, that Moses' God should not have had to do that; he should be able to merely will the hairs to maintain their optimal lengths. In other words, Galen argues, the production of finely crafted natural beings cannot come about without an 'appropriate alteration'. God may choose, but he can only choose the best alternative. Supposedly Moses' God can do whatever he wishes, without restriction. Maimonides agrees with Galen for the most part, including the assertion that some things are inherently impossible, even for God. The problem is to delimit properly just what is inherently impossible such that even God cannot do it. Maimonides makes it clear in the *Guide* (3.15) that all those who engaged in speculative thinking agree that some things are impossible. They do, however, disagree about 'a certain species of imaginable things', which some of these thinkers consider to belong to the category of the impossible, while others believe otherwise. Maimonides acknowledges that 'the bringing into being of a corporeal thing out of no matter whatsoever' – creation *ex nihilo* – belongs to this 'species of imaginable things'. Jewish doctrine as interpreted by Maimonides holds it to be possible, whereas the philosophers assert that it is impossible.³⁸

Deciding that creation is possible was not an easy matter for Maimonides. His pained expressions on the topic are not merely a cover for his 'true' doctrines. Uncharacteristically, he confides to his readers in the *Guide* (3.15) the difficult deliberations with others and in his own mind on the delimitation between the impossible and the possible, which in this case amounts to the same

36 Maimonides, *Fuṣūl Mūsā*, 25.62, ed. and tr. Bos (2017) 179–80.

37 I will shortly return to Galen's concept of will, relying on the research of Richard Walzer.

38 See Maimonides, *The Guide of the Perplexed*, 3.16, tr. Pines (1963a) 460.

thing as the precise differentiation between intellect and imagination. He asks, 'Is there something that shuts and blocks this gate so that a man can assert decisively that such and such a thing is impossible because of its nature?' A few lines further he reveals, 'For an individual sometimes disagrees with someone else or with himself with regard to a thing that in his opinion is possible', but the 'objector', who may be another voice in the individual's mind, replies that it is the imagination, not the intellect, which allows that possibility.³⁹ Maimonides leaves the matter open. At the end of the chapter, the reader is asked only to take away the conclusion that there is a class of things that may or may not be possible and about which thinkers disagree.

One subtle sting in Galen's exposition seems to have been lost in the transmission. Richard Walzer notes that Galen uses two different verbs for the verb 'to will', with significantly different meanings. When speaking of the Demiurge's will, he employs *proaireisthai*, which denotes 'the discursive activity of the will as directed towards the realisation of an end in action', but when speaking of the God of Moses, he uses *boulēthēnai*, which means 'the will directed towards an end without considering the possibility and means of its realisation'.⁴⁰ In other words, the Jewish God acts impulsively. The Arabic translation that Maimonides read, however, only has forms of *shā'a*, the word most commonly used in Islamic and Jewish texts for the divine will. Its precise meaning, if it is precise, remains to be determined. Here it is suggested that it lies somewhere between the two Greek terms: will that is not impulsive, but also not necessarily restrained by any purposefulness, at least not one that can be detected by human reason.

Maimonides' full response in his polemical encounter with Galen opens by severely reprimanding Galen for misrepresenting not only the views of 'the followers of the divine laws' but also those of the philosophers. He repeats the observation he made at the beginning of his critique: Galen is not really competent to speak about anything other than medicine. Moving on to the specific issues at hand, Maimonides identifies four views that Galen ascribes to 'Moses'. Three of these are mistaken, that is, mistaken according to Jewish thought as Maimonides sees it:

- Galen claims that the biblical God 'commanded' the eyebrows not to grow long, but God 'commands' only intelligent beings. The latter is one of the central points of Maimonides' interpretation of the story of Adam and Eve, which he sets forth in the first two chapters of the *Guide*, their placement in the book itself being significant.

39 Maimonides, *The Guide of the Perplexed*, 3.16, tr. Pines (1963a) 460.

40 Walzer (1949: 25).

- Galen claims that nothing is impossible for the God of Moses. This too is wrong. This point receives a chapter in the *Guide*, as noted. One also learns there, however, that there is room for disagreement – not just between ‘Moses’ and the philosophers (true, competent philosophers), but also within the community of those committed to the divine codes – about the precise delimitation of what is impossible for God.
- In discussing the cartilage whose purpose it is to restrain the growth of the eyelashes, Galen states, or at least strongly implies, that the God of Moses need not choose the proper material out of which to craft his creations. But this is not correct, since God does nothing in vain or by chance. On this critical issue, the only one where Maimonides announces complete agreement between ‘Moses’ and Galen, Maimonides refers to an as yet unidentified writing of his on ‘the principles of religion’ (*fī uṣūl al-dīn*).⁴¹ It has been noted how this same point bears upon ‘the material principle’ out of which the eyebrows and eyelashes are crafted, as well as its connection to Maimonides’ remarks in the *Guide* concerning bodily hairs and the behaviour of matter.
- The only one of the four views ascribed to ‘Moses’ which ‘Moses’ truly advocates is that God, should he wish to do so, could ‘instantly create’ (*dufʿatan khalāqa*) a horse out of ashes. This opinion is a ‘necessary ramification and the principle of his principles’ (*farʿ lāzīm wa-aṣl aṣlihi*). This one disagreement, then, stems from a core belief – the core belief – of Judaism.

What is this core belief? Maimonides identifies it as the creation (*ḥudūth*) of the world. Scholars have long debated just what Maimonides’ ‘true stance’ is on this critical question. He very carefully defends creation in the *Guide*. Indeed, his exposition is so careful, the *Guide*’s style so tantalisingly elusive, and Maimonides’ acceptance of Aristotle’s authority so apparent, that many, or perhaps most, academic scholars do not think that he truly endorsed creation. In *Fuṣūl Mūsā*, book 25, Maimonides takes care to spell out in detail just what he understands by ‘creation’ (*ḥudūth*) and how it is inextricably bound with another belief, that of miracles. He makes it as clear as he can what he means by ‘miracle’ (*muʿjiza*).

The response to Galen is undoubtedly polemical, but that does not mean that it does not exhibit Maimonides’ sincere beliefs. As noted, he did not live

41 The only scholar I know of to take a stand on this is Rabbi Yosef Kafih (1987: 159, n.69), who has this to say in a note to his Hebrew translation of this passage: ‘In my opinion, our rabbi [Maimonides] intends here what he wrote in his commentary to the *Mishnah*, the introduction and chapter ten of *Sanhedrin*, and also in “The Fundamental Laws of the Torah” of *Mishneh Torah*. He is not alluding to the *Guide of the Perplexed*, because this material preceded the *Guide of the Perplexed*; after all, he changed his mind there concerning some things that he wrote here’.

to edit this section of his *Fuṣūl Mūsā*, and he may have expressed himself a bit differently had he had the opportunity, but there is no question that he did author this response to Galen at some point in his career. There is nothing esoteric or elusive about his style in the *Fuṣūl Mūsā*, nor would that specialised book cause him to worry that his views would be misunderstood by an uneducated audience. For all of these reasons – but especially because here Maimonides calls the joint doctrine of creation and miracles the ‘principle of his [Moses’] principles’, the root of all roots – it is important to hear him out and give his explicit remarks their due weight when deciding just what his ‘true stance’ is.

Here too one can see a terminological nicety, which Maimonides exploits to his advantage. The Arabic Galen speaks of ‘creation’ (*genesis*) using forms of *khalaqa*, including when speaking of ‘the material principle from which they were created’. Though *khalaqa* in Arabic is perfectly good for referring to creation ex nihilo, Maimonides realises that it means, for Galen, fashioning something out of pre-existing matter. Hence, when describing the Jewish view – the heart of the dispute with Galen – he is careful to use different verbs: *awjada* and *ḥadatha*. On the other hand, as noted, when speaking of the miraculous fashioning of a horse out of ashes, which is not ex nihilo, he again uses *khalaqa*. Maimonides appears to be precise in his choice of vocabulary when speaking of these delicate and pivotal issues.

Zooming in on the crux of the critique, what doctrine is Maimonides defending? Just what is the Jewish position on the origin of the cosmos? Maimonides makes as clear a statement here as anywhere in his writings just what he means by ‘the creation of the world’ (*ḥudūth al-‘ālam*):

For the meaning of the world being created is that God – may He be exalted – is the sempiternal (*al-qadīm*) and the eternal (*al-azalī*). He alone, nothing else along with him – He created (*aḥdatha*) the world after its utter non-existence; He brought into existence (*awjada*) this heaven and all that it contains; He brought into existence the primary matter that is beneath the heaven, making from it water, air, earth and fire, impressed upon this orb these various circuits just as He willed, and impressed upon these elements and all that is compounded from them those natures which we witness, because He grants them the forms (*muṭihā al-ṣuwar*) by means of which become nature for them. This is the principle (*aṣl*) of the school of Moses, peace be upon him.⁴²

42 Maimonides, *Fuṣūl Mūsā*, 25.64, ed. Bos (2017) 186. I have here preferred my own translation of the Arabic text here, though it does not differ substantially from that of Bos (2017: 185).

Creation, then, means the bringing into existence of matter from utter nothingness, but it includes the 'Greek' doctrine of impressing elemental forms onto matter and orbital motions onto the heavens. The doctrine that the deity brought the cosmos into existence from naught, carries with it extremely important consequences. Since God gave existence to first matter, he can take it away, thus annihilating it. Since God impressed upon matter its nature – in Arabic the terms 'to impress' and 'nature' are derived from the same root – he can also, instantaneously, change its nature, impressing upon it a different form; the impressing of forms is also part of the doctrine of creation. God can also change the nature of only a few parts of the cosmos and leave the rest as it is. Miracles belong to this last category. Since miracles are possible only because the world was created, a single miracle – even if it involves only one simple object – testifies decisively to the truth of the doctrine of creation. In other words, because creation includes both *ex nihilo* as well as the impression of forms on existing matter, a transformation that is unusual enough to be classified as miraculous testifies both to God's ability to create out of nothing as well as his capacity to make swift and unusual changes.

With so much of the belief system riding the possibility of a miracle, Maimonides obliges by providing a clarifying definition: 'I mean here by miracle, that which has in it, its being (*kawnuhu*) different from the natural being which it is accustomed to having all of the time'.⁴³ This sentence is somewhat cumbersome. I translate *kawn* as 'being', to distinguish it from *wujūd*, 'existence'. *Kawn* can also mean 'occurrence', and one can render the definition in this manner without distancing it too much from the literal translation: a miracle is an occurrence or event that deviates from the natural course of things. Maimonides goes on to distinguish two sorts of miracles. In the first sort, the transformation of natural object into another is compressed to a single instant. In other words, the particles that make up a wooden staff could, in theory, after a long series of natural processes of generation and destruction, eventually regroup as a serpent. In a miracle, this happens all at once.

In the other sort, an entirely new object comes into being – something that has not existed before – but in its makeup and constitution, it is natural. An example is the manna that the Israelites ate during their forty years of wandering. Though nothing of the sort had been around before, the manna could be ground and made into bread; it would melt when exposed to the sun, just like natural foodstuffs. Of course, it nourishes the human body. Though such

43 The Arabic (Maimonides, *Fuṣūl Mūsā*, 25.64) is edited by Bos (2017) 188, who translates on the preceding page: 'I mean by miracle here [those cases] in which there appears the existence of a thing not in accordance with the normal and permanent nature of existence'.

a foodstuff was not known before it, its existence is certainly possible – but only if one allows creation. It seems that in principle, these transformations as such would be allowed by Galen, even if he does not recognise the miraculous examples cited by Maimonides.⁴⁴

Maimonides does not mention here an important feature of his theory of miracles that is emphasised elsewhere: that miracles constitute divine intervention, which prevents a natural process from arriving at completion. Here too the resemblance to Galen is striking. Riccardo Chiaradonna has observed that, ‘Galen maintains that god cannot actualise a natural power which does not exist, but that he can prevent any existing natural capacity from realising itself’.⁴⁵

The one serious competitor to creation that Maimonides recognises – and he is no longer specifically dealing with Galen’s views, which he considers too confused to constitute a real threat – is the view of the cosmos as locked for eternity in exactly the same natural patterns, with the same species, and so forth. Formally speaking, this determinate cosmos depends on a supreme being for its existence, but the supreme being can do no more than bestow existence, ontic reality, on a fixed and unchanging system.

This involved and delicate discussion takes one a long way from the divine wisdom evident in the eyelashes and eyebrows. Maimonides and Galen are in complete agreement that their precise length – exactly the measure needed to protect the eyes – is a product of design, rather than chance. Both agree that the being responsible for this design did not simply will it, but rather provided material support for it in the form of cartilage, in accordance with the various properties manifest in different materials. Galen, however, presented a Jewish position different from that of Maimonides. His source, though unclear, is not germane to Maimonides’ response. In any event, Galen spurred Maimonides into giving as full an explanation as he does anywhere as to what creation means for him, what a miracle is, and why these two occurrences are so critical. Too bad that he did not live long enough to put a final polish on his exposition.

44 See Galen, *Hipp. Elem.*, ed. Kühn (1821) I.430 = ed. and tr. De Lacy (1996) 72–3, ‘Something different in kind ... can be allowed from elements that do change them [their qualities]. For, it is possible that in the course of many intervening changes what was formerly black may in turn become white and what was formerly white may in turn become black and what is now insentient may become sentient’.

45 Chiaradonna (2009: 248). On Maimonides evolving attitudes towards the miraculous, see Langermann (2008).

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Galen and Ibn al-Nafis

Nahyan Fancy

The¹ longest preserved fourteenth-century biographies of the famous Syro-Egyptian, physician-jurist, Ibn al-Nafis (d. 1288), describe his relationship to Galen as follows: '[Ibn al-Nafis] loathed the style of Galen and described it as weak and profuse with nothing in it, and this in contrast with our Professor 'Imād al-Dīn al-Nābulusī, who valued it highly and encouraged the reading of Galen's works'.² The biographers' assessment of this relationship is supported by three key facets of Ibn al-Nafis' medical writings: (1) the regular criticisms of Galen's medical theory and arguments found therein, including the well-known critique of his cardiovascular anatomy; (2) their independence from Galen, particularly Ibn al-Nafis' commentaries on Hippocratic works such as the *Aphorisms*; and (3) the absence of any commentary on Galen's stand-alone works, such as *On the Function of the Parts of the Body*, even though, as the biographers attest, his contemporaries and predecessors regularly taught and composed commentaries on them. Nonetheless, Ibn al-Nafis also found much to admire in Galen's works and mined them constantly to improve his understanding of medicine. At times, he even defended Galen's positions against his critics, especially Ibn Sīnā (Lat. Avicenna, d. 1037). It would thus be fair to say that Ibn al-Nafis respected Galen's medical acumen and accomplishments without deeming him infallible.

Ibn al-Nafis' commentary on the anatomical parts of Avicenna's *Canon of Medicine* has received the most attention from historians thus far. In it, Ibn al-Nafis challenges Galen's claim that blood seeps into the heart's left ventricle from its right through *invisible* pores in the septum wall. In rejecting this claim, Ibn al-Nafis proposes his widely known theory of the pulmonary transit, that whatever blood is found in the left ventricle is transported to it from the right via veins and arteries that pass through the lungs.³ This anatomical result laid

1 All translations are mine, unless otherwise indicated.

2 Khalil ibn Aybak al-Šafadī, *Wāfi bi-l-wafayāt* (*Completeness in Obituaries*) and Ibn Faḍl Allāh al-'Umārī, *Masālik al-abṣār fī mamālik al-amṣār* (*Pathways of Vision in the Realms of the Metropolises*), ed. and tr. Schacht and Meyerhof (1968) 13, 145.

3 The result was first brought to the attention of the professional community of historians of science by Meyerhof (1935). For a recent assessment of Ibn al-Nafis' result within his larger intellectual context, see Fancy (2013a).

the foundations for the Renaissance critique of Galenic cardiovascular anatomy and physiology, culminating in William Harvey's theory of blood circulation. Consequently, the preface to Ibn al-Nafis' *Commentary on the Anatomy of the Canon*, in which he addresses Galen's anatomical writings directly, provides the perfect starting point for analysing Ibn al-Nafis' relationship to Galen:

We have brought together what he [i.e. Ibn Sīnā] said in the first book of the *Qānūn*, with what he said in the third book of this treatise, for in that way the discussion concerning anatomy will be together and [properly] organised. The precepts of Islamic law (*sharīʿah*) have discouraged us from the practice of dissection (*tashrīḥ*), along with whatever compassion is in our temperaments. For this reason we think we will rely for knowledge of the forms of the internal parts on the discussion of our predecessors among those who practiced this art, especially the excellent Galen, since his books are the best of the books on this topic which have reached us, in addition to which he examined many of the muscles whose observation had not occurred before. For that reason, we have placed most of our reliance for the knowledge of the forms and positions of the parts and related matters on his statements, except for a few things that we suppose were due to errors of the scribe or his [i.e. Galen's] information regarding it not being verified through observation.⁴

The preface illustrates Ibn al-Nafis' complex relationship to the Galenic corpus. On the one hand, he states that he has refrained from undertaking systematic dissections himself,⁵ unlike Galen whom he praises above all other ancient authorities in this art. He thus relies upon Galen's descriptions of the internal parts *in most cases*. The exceptions are where Galen's works contain errors, either due to copying mistakes or due to his own (incorrect) speculations that were not 'verified through observation'. This final phrase suggests that Ibn al-Nafis corrects Galen's errors using *observations*, which contradicts his earlier statement that his anatomical knowledge is not derived from dissections and/or direct anatomical observations. In truth, he appeals to personal observations while critiquing Galen, such as the following comment from his commentary on the collar-bone:

4 Ibn al-Nafis, *Commentary on the Anatomy of the Canon (Sharḥ tashrīḥ al-Qānūn)*, ed. Qataya and Ghalioungui (1988) 17. As translated (and emended) in Savage-Smith (1995: 99–101).

5 Dissection was not, strictly speaking, prohibited under Islamic law; see Savage-Smith (1995).

Galen said: 'This bone is joined to the breast bone using a flexible joint'. This is problematic for a joint is created to be flexible when there is a need for any of its two bones to possess its own apparent motion. But there is no such need here. Nor do we see (*nushāhid*) that [this joint] possesses such a motion.⁶

This appeal to observation to correct past errors is combined with rational, philosophical argumentation in the final sentence of the *Commentary's* preface:

But as for the usefulness of each one of the parts, then we rely for knowledge of that upon what verified reasoning (*al-naẓar al-muḥaqqaq*) and sound investigation (*al-baḥṭh al-mustaqīm*) dictate, even if the opinion of our predecessors is not consistent with ours or differs from it.⁷

This sentence succinctly characterises an essential feature of Ibn al-Nafīs' writings and their relationship to the works of Galen (and others), namely that Ibn al-Nafīs is primarily concerned with establishing truths, insofar as that may be possible for a given medical topic, regardless of whether or not those truths conform to the opinions of his predecessors. For example, in the preface to both the commentary on book one of the *Canon* and his (mature) *Commentary on the Hippocratic Aphorisms*, Ibn al-Nafīs claims that his ultimate goal in composing these commentaries is to 'support the truth and raise its towers, and denounce the false and wipe out its traces'.⁸ In the *Commentary on the Canon*, Ibn al-Nafīs even states that he will 'explain each school' while commenting

6 Ibn al-Nafīs, *Commentary on the Anatomy of the Canon (Sharḥ tashrīḥ al-Qānūn)*, ed. Qataya and Ghalioungui (1988) 119. There are other cases where he makes such appeals to observation with regards to internal parts, such as the gastric veins, mesenteric veins, and the bile duct. The joint between the collarbone and breastbone is known as the sternoclavicular joint in modern anatomy. It is the primary site of rotational motion and prevents the linear displacement of the medial clavicle.

7 Ibn al-Nafīs, *Commentary on the Canon (Sharḥ tashrīḥ al-Qānūn)*, ed. Qataya and Ghalioungui (1988) 17. As translated in Savage-Smith (1995: 101), with my emendations based on the Arabic text.

8 Ibn al-Nafīs, *Commentary on the Canon (Sharḥ al-Qānūn)*, Wellcome Library MS Ar. 51, fol. 1b5–6; Ibn al-Nafīs, *Commentary on the Hippocratic Aphorisms (Sharḥ Fuṣūl Abuqrāṭ)*, ed. Zaydan (1991a) 94; Fancy (2013b: 529). A manuscript of Ibn al-Nafīs' earlier commentary on the *Aphorisms* also survives, in which he suggests that his investigations have led him to opinions that are different than those of his predecessors. He requests his readers to consider the arguments for his (new) opinions carefully rather than dismissing them outright; see Savage-Smith (2012: 19); Fancy (2017).

upon the text of the *Canon*, before subjecting each opinion to ‘verified reasoning’ in order to arrive at the truth of the matter under discussion. This process of *verification* (*taḥqīq*) sometimes leads him to agree with Galen against Avicenna, sometimes to side with Avicenna over Galen, and at other times to reject both their opinions (and also those of other authors) in order to propose and then defend his new theories. There are also times he agrees with both, such as his acceptance of the widespread belief in males being warmer than females, or the right side being warmer than the left.

For example, although Avicenna (siding with Aristotle) claims that the heart has three ventricles, Ibn al-Nafis rejects it in favour of Galen’s view that the heart only has two ventricles.⁹ However, he accepts Galen’s view not on Galen’s own authority, but rather based on his own investigation. As he states:

The heart has only two ventricles. The first of which is filled with blood, and this is the right, and the other is filled with spirit, and this is the left. *And there is definitely no passage between the two*, otherwise the blood would be transported to the location of the spirit and ruin its substance. Also, anatomy/dissection (*tashrīḥ*) disproves what [Ibn Sīnā] says.¹⁰

Neither does Ibn al-Nafis mention Galen in this quote, nor does his characterisation of the contents of each ventricle rely upon Galen. In fact, he directly challenges Galen by asserting that the septum wall is not porous for that would permit thick blood to seep into the chamber of the subtle spirit and ruin its substance. So even though he concurs with Galen against Avicenna’s claim that there are three ventricles, he does so based on his own engagement with medical theory/physiology.¹¹

It is important to recognise that, as Andrew Cunningham has indicated, pre-modern physiology was primarily a *discourse* – a ‘thinking and talking discipline’.¹² Although anatomical observation played a part in establishing physiological claims, the primary mode of argumentation was rational argumentation. This is apparent in the passage above wherein Ibn al-Nafis first rejects the existence of three ventricles and pores in the septum wall by appealing

9 Ibn al-Nafis, *Commentary on the Anatomy of the Canon (Sharḥ tashrīḥ al-Qānūn)*, ed. Qataya and Ghalioungui (1988), 388; cf. Galen, *AA*, 7.10, ed. Kühn (1824) 11.621.2–5; tr. Singer (1956: 187). See also Strohmaier’s contribution (Chapter 11) on Avicenna in this volume.

10 Ibn al-Nafis, *Commentary on the Anatomy of the Canon (Sharḥ tashrīḥ al-Qānūn)*, ed. Qataya and Ghalioungui (1988) 388; Fancy (2013a: 108–9).

11 For more, see Fancy (2013a).

12 Cunningham (2002: 645).

to his larger medical theory (which he proposes and establishes using rational argumentation and empirical evidence in the earlier commentary on book one of the *Canon*), and only secondarily appeals to anatomy/dissection to confirm his point. The term *tashrīḥ* in the passage, much like its Greek counterpart (*anatomē*), could refer to the science of anatomy or the actual practice of dissection. It is thus unclear whether Ibn al-Nafīs is here recording his own observation of the heart possessing only two ventricles, or deriving it from Galen's works. Certainly, no religious stricture would have forbidden him from examining the heart of a dead sheep to ascertain whether or not there were visible pores in the septum wall.

At other times, Ibn al-Nafīs sides with Avicenna against Galen, such as in the case of Avicenna's rejection of the Galenic understanding of semen and generation. In both the *Canon of Medicine* and his philosophical summa, *Book of Healing*, Avicenna addresses the conflict between Galen and Aristotle about semen and its faculties. In the *Canon*, Avicenna states that Galen (and the physicians) claim that both males and females produce semen, and the semen of each possesses active and passive faculties of generation. The only difference is that the active faculty of generation is stronger in the male semen, and the passive faculty in the female semen. On the other hand, the philosophers (including Aristotle), maintain that only the male semen possesses the active faculty and the female fluid is only called 'semen' by analogy when in actual fact it is more akin to menstrual blood. Avicenna concludes by stating that the philosophers are right and directs his readers to his philosophical works for the proofs.¹³

In *Book of Healing*, Avicenna rails against Galen's assertion that both male and female semen have active and passive faculties. The crux of his argument is as follows:

If something has in it an active faculty that corresponds to a passive faculty [in it], then an action must result. And if the faculty is weak, then the action must be weak. But where there is no action whatsoever, then there cannot be a [corresponding] faculty.¹⁴

In short, if the female semen possesses a weak active faculty and a strong passive faculty, it should be able to generate a foetus on its own. Thus, according to Avicenna, the male semen does not contain any passive faculty (i.e. does

13 Ibn Sīnā, *Canon of Medicine* (*al-Qānūn fī al-ṭibb*), 3.20, ed. al-Ḍinnāwī (1999) II.727.

14 Ibn Sīnā, *Book of Healing* (*Kitāb al-Shifā'*): *al-ṭabī'yyāt*, 8. *al-ḥayawān*, 9.3, ed. Mustansir, Zayed and Isma'il (1970) 161.

not contribute materially to the foetus), whereas the female semen does not contain any active faculty (i.e. only contributes materially to the foetus).

In his *Commentary on the Canon*, Ibn al-Nafis agrees entirely with Avicenna's critique of Galen and rejects the notion that both male and female semen have active and the corresponding passive faculties. Nonetheless, he then goes a step further than Avicenna by denying that even the male semen has active faculties, for that would entail that the male semen stay connected to the father's soul (in order to receive faculties from it) even after it settles in the mother's womb. Ibn al-Nafis exclaims:

How could that be possible when a limb, whose connection to the soul is necessarily far more than the soul's connection to residues [such as semen], degenerates once it is separated from the body and its connection to the soul is severed. Then how is it possible that the semen can stay connected to the father's soul during the time that it stays in the womb and the [foetal] parts are generated?¹⁵

Ibn al-Nafis concludes that both male and female semen are merely residues of nutrition and thus only contribute materially to the foetus. The active faculties of generation are emanated to the mixture of male and female semen by the new foetal soul, which attaches itself to the mixture once the two semen mix.¹⁶

Even when Avicenna and Galen agree on a point, Ibn al-Nafis feels comfortable in challenging their combined authorities based on his own investigations. For example, Avicenna agrees with Galen that the pulse is caused by the vital faculty resulting in the simultaneous expansion and contraction of the heart and arteries. Ibn al-Nafis, however, claims that the heart's motion is what causes the motion of the arteries, in that when the left ventricle of the heart expands, it recalls the arterial spirit back to itself thus forcing the arteries to contract. Once the heart contracts, the arteries return back to their normal expanded state and receive fresh spirit from the heart.¹⁷ Ibn al-Nafis provides a detailed exposition of his account, complete with objections, counterpoints, responses to objections and consequences. He further buttresses his account by assigning the non-synchronous view to the ancients.

15 Ibn al-Nafis, *Commentary on the Canon (Sharḥ al-Qānūn)*, Wellcome Library MS Ar. 51, fol. 60b5–7.

16 For more on Ibn al-Nafis' views of ensoulment and generation, see Fancy (2013a: 97–101; 2018b).

17 Fancy (2013a: 105–8).

Many later Islamic medical commentators accepted Ibn al-Nafis' new account and his critique of the Galenic account. In fact, as the following passage from an extremely popular commentary on Ibn al-Nafis' *Epitome* shows,¹⁸ by the mid fifteenth century Galen had been displaced from being *the supreme* medical authority to just another medical author who espoused (incorrect) views on certain medical matters:

There is disagreement on whether the motion of the arteries follows the movement of the heart or not. Galen, and those who follow him, believe that the motion does not follow the movement of the heart but rather is due to a faculty in [the artery]. Then they disagree on this faculty. Some say that it is the vital faculty, while others from amongst the moderns say that it is the natural faculty belonging to the arteries. Others believe that its motion follows the movement of the heart, then they disagree on that too. Some of the ancients say that [the artery's] expansion is at the time of the expansion of the heart, and its contraction is at the time of [the heart's] contraction, which has been chosen by some of the moderns. But most of the ancients say that its contraction is with the expansion of the heart and its expansion with the contraction of the heart, and this has been chosen by the author [i.e. Ibn al-Nafis]. For that reason, he places contraction before expansion. He says contraction and expansion because the contraction of the artery, in his opinion, is before its expansion because the expansion of the heart is to absorb the cold air to temper the spirit, which must take place before its contraction which is to remove the warmed air, since the removal of the warmed air must necessarily come after its entrance. The expansion of the heart is required for the contraction of the artery and its contraction for the expansion. The contraction of the artery thus follows necessarily the expansion of the heart.¹⁹

18 *The Epitome of the Canon/The Epitome of Medicine* (*Mūjaz al-Qānūn/Mūjaz fī al-ṭibb*) has long been attributed to Ibn al-Nafis. It is a summary text that was often used to introduce students to the *Canon of Medicine*. Technically speaking it is not an abridgment of the *Canon* as some of its content is different, but it does follow the *Canon* quite closely in structure and content. For more, see Fancy (2013a: Appendix; 2013b).

19 Nafis ibn 'Iwaḍ al-Kirmānī, *Sharḥ al-Mūjaz* (*Commentary on the Epitome*) (1855) 54–5; cf. Ibn al-Nafis, *Commentary on the Canon* (*Sharḥ al-Qānūn*), Wellcome Library MS Ar. 51, fol. 104b22ff. Galen's views on generation are similarly dismissed in later medical works; see Fancy (2018b). Ibn al-Nafis' new accounts of pulse and generation were widely discussed and informed later critiques of the Galenic account in Arabic (and Latin).

The preceding discussion reveals that Ibn al-Nafis and, following him, Nafis ibn 'Iwaḍ al-Kirmānī (d. after 1439) were not averse to marshalling the authority of the ancients to support their claims (both assign the non-synchronous view of pulse to 'most of the ancients (*akthar al-qudamā'*)'). Yet, they do not classify Galen as an ancient but rather refer to him as one of the 'moderns (*al-muḥdathīn*)'. Historians of medicine are familiar with the tactic of using the authority of the ancients to buttress one's own opinions, for this is precisely the tactic Galen uses in much of his corpus. Throughout his independent works, Galen marshals the authority of one specific ancient author, Hippocrates, to champion his own medical theories. He was so successful in fusing his own medical opinions with those of Hippocrates, particularly through his extensive commentaries on the Hippocratic corpus, that, as Rebecca Flemming states, it was Galen's 'interpretation of Hippocratic thinking, which ... transmitted itself most effectively down the ages'.²⁰

Ibn al-Nafis revered Hippocrates similarly. Biographers claim that Ibn al-Nafis composed multiple commentaries on each Hippocratic work. This is probably an exaggeration since his commentaries on only four Hippocratic works are extant and attested in bibliographic sources, and only in the case of the *Aphorisms* is there any suggestion that he composed multiple commentaries on the same work. Nonetheless, these four commentaries still make Ibn al-Nafis one of the most prolific commentators on Hippocrates in the Arabic tradition.²¹ Yet, inasmuch as Ibn al-Nafis agreed with Galen on the virtue of commenting upon Hippocrates, he did not agree with the content of Galen's own commentaries. Instead, Ibn al-Nafis used his Hippocratic commentaries and, more importantly, Hippocratic lemmas in his *Commentary on the Canon* to fuse his own medical opinions with the teachings of the great Hippocrates to elevate himself over Galen and Avicenna. By doing so, Ibn al-Nafis broke Galen's interpretative monopoly over the Hippocratic corpus far more substantially than any preceding author in the Arabic tradition, including Abū Bakr al-Rāzī (Lat. Rhazes, d. c. 925) and the famous Hippocratic commentator, Ibn Abī Šādiq (d. 1068).²²

Ibn al-Nafis' commentaries on the following four Hippocratic works are extant: *Aphorisms*, *Epidemics*, *Prognostic*, and *On the Nature of Man*. Although Arabic commentaries on the *Aphorisms* are well attested in bibliographies

20 Flemming (2002: 101). Also see, Smith (1979); von Staden (2002).

21 Fancy (2017: 152).

22 For more, see Fancy (2017).

and surviving manuscripts, very few Islamic physicians composed complete commentaries on other Hippocratic works. In fact, Ibn al-Nafīs ‘compose[d] the first Arabic commentary on the *Epidemics*’,²³ and only two independent commentaries are known to have been composed prior to Ibn al-Nafīs on the *Prognostic* – one by ‘Abd al-Latīf al-Baghdādī (d. 1231) and one by Ibn al-Nafīs’ teacher, Muḥadhdhab al-Dīn al-Dakhwār (d. 1230).²⁴ Other Islamic physicians relied heavily on Galen’s commentaries on Hippocratic works which were widely known and used by Islamic physicians in Ḥunayn ibn Iṣḥāq’s Arabic translations.²⁵ Galen’s interpretive hold over the Hippocratic corpus is also visible in the commentaries on the *Aphorisms*, such as in the most popular commentary by Ibn Abī Šādiq.²⁶

Ibn al-Nafīs’ commentaries, however, are remarkably independent of Galen, even though it is evident that Ibn al-Nafīs knew Galen’s commentaries well.²⁷ In his *Commentary on the Epidemics*, ‘Ibn al-Nafīs remains closer to the text of the lemma than either Galen [or] Ḥunayn’.²⁸ He is far more succinct in his comments than Galen and often excludes aspects found in Galen’s commentary. In other cases, he introduces his own examples that have no precedence in the Galenic text.²⁹ For example, in his commentary on *Epidemics* 2.1, which is about a case of carbuncles in the city of Crannon, Ibn al-Nafīs defines a carbuncle succinctly as ‘an ulcer: scabby, blackish, inflamed and blistered around it’.³⁰ In contrast, Galen, and following him Ḥunayn, provide long-winded definitions on the precise colour and the type of heat of carbuncles, and even contrast carbuncles with another kind of inflammation. Galen and Ḥunayn also do not mention ‘blistered’ in their definitions, as opposed to Ibn al-Nafīs.³¹

23 Hallum (2012: 207). In his *Sources of Information on the Classes of Physicians* (*‘Uyūn al-anbā’ fī ṭabaqāt al-aṭibbā’*), ed. Riḍā (1965) 323–5, Ibn Abī Uṣaybi‘ah (d. 1270) claims that Abū al-Faraj ibn al-Ṭayyib (d. 1043) had also composed a commentary on the *Epidemics*, but no manuscript has yet been identified. It is also unclear whether Ibn al-Ṭayyib composed an independent commentary or, like Ḥunayn ibn Iṣḥāq, he too had composed a text that extracted elements from Galen’s commentary on the work; see Hallum (2012: 187).

24 Joosse and Pormann (2012: 257).

25 Pormann (2008); Joosse and Pormann (2012: 255).

26 Karimullah (2017); Fancy (2017).

27 Bachmann (1971); Abou Aly (2000); Fancy (2017).

28 Hallum (2012: 209).

29 Bachman (1971: 306–8); Hallum (2012: 207–9); Fancy (2017).

30 Ibn al-Nafīs, *Commentary on the Epidemics of Hippocrates* (*Tafṣīr Iḥidhimīyya li-Buqrāṭ*) as quoted in Hallum (2012: 207).

31 Hallum (2012: 207–9).

Similarly, when commenting upon the famous first Hippocratic aphorism ('Life is short, the art is long'), Galen, and following him Ibn Abī Ṣādiq and other Islamic physicians, present the contrast between the extent of life and knowledge of the art in relative terms. That is, life is short when measured against the vastness of medicine (and other speculative sciences).³² On the other hand, Ibn al-Nafis proceeds immediately to establish why, *in themselves*, life is short and the art of medicine is long:

'Life' (*ʿumr*) is the duration of the living (*ḥayāh*). In many of our books we have argued that it is finite. We have not, however, come across any causal argument for its limitation and brevity. Inductive reason shows that it usually lasts between sixty and seventy years, and only rarely extends beyond 120.

An 'art' [craft] is a habit of the soul that enables a person to employ certain objects toward a certain purpose according to his will, resulting from insight as far as that is possible with regard to it. By 'the craft', medicine is meant, because the definite article used here can only have the purpose of indicating something specific. Medicine is 'long', because its problems are diversified with the diversity of the changes our bodies undergo; they are something new every moment as the necessary result of constant dissolution and the intake of food. This has as its consequence changes of quantity and quality. Length and brevity may be used as relative terms, but they may also be used as absolute terms when we say, for instance, that the time period is long. This is meant here. For life as such is short, and medicine as such is long.³³

In his commentaries on Hippocratic works, Ibn al-Nafis relies exclusively on Ḥunayn's Arabic translations since, as far as we know, he did not know Greek. At times, this generates some problems for Ibn al-Nafis' interpretation as Ḥunayn's rendering of the Greek into Arabic makes the Hippocratic lemma far more opaque. For example, relying upon Galen's interpretation of *Aphorisms* 1.11, Ḥunayn renders the aphorism in Arabic as 'You should forbid food at the time of the height of the disease for addition [to it] is harmful'.³⁴ The original Greek lemma, on the other hand, conveys the meaning that, in times of crises, reducing food is recommended while additional food proves harmful. Rather

32 Rosenthal (1966: 232–40).

33 Ibn al-Nafis, *Commentary on the Aphorisms of Hippocrates* (*Sharḥ Fuṣūl Abuqrāṭ*), ed. Zaydan (1991a) 94–6; tr. Rosenthal (1966: 240).

34 [Hippocrates], *Kitāb al-Fuṣūl vers. arab.*, ed. Tytler (1832) 5.

than questioning the Arabic translation that oddly recommends forbidding food, Ibn al-Nafīs tries to make sense of this aphorism while recognising that (based on another Hippocratic aphorism) what must be meant here is that the food is to be reduced but not entirely forbidden. Thus, he hesitatingly suggests that Hippocrates must have meant that additional food is forbidden and not food altogether, while conceding that this is far from clear in the lemma.³⁵

The above case shows that even when the odds are stacked so heavily in favour of a Galenic interpretation (thanks to the Arabic translation), Ibn al-Nafīs still departs from it based on his own examinations. When the Arabic translations of Hippocratic lemmas do not favour particular Galenic interpretations, Ibn al-Nafīs freely adopts non-Galenic ones, if that is where his *verifications* lead him. For example, Hunayn's translation of *Aphorisms* 1.18 (1.19 in Greek) renders the Hippocratic lemma faithfully as not to give patients experiencing a periodic exacerbation of a fever anything, and even to reduce the additions before the time of crisis. In so doing, Hunayn does not follow Galen in restricting the 'additions' to food alone. This allows Ibn al-Nafīs to claim that both medications and food are to be reduced in such crises.³⁶

In the case of *Aphorisms* 5.48, Ibn al-Nafīs provides a starkly anti-Galenic interpretation. The original lemma states: 'When the child is male it is more common for it to be on the right side, and when it is female on the left side.'³⁷ In his *Commentary*, Galen presents key features of his well-known right – left theory of sex differentiation that is spelled out fully in his work, *On Semen*. Since males are warmer than females, they must be borne on the right side of the womb, as this side is warmer due to its proximity to the liver. Moreover, males must also be generated from warmer semen which is derived from the right testicle.³⁸ The full anatomical explanation for why the right testicle carries warmer semen is spelled out in Galen's *On the Function of the Parts of the Body*, where he states:

Of the vessels that pass to the generative parts, however, the ones ... going to the right uterus and right testis start from the great vessels themselves that are along the spine, the vein from the vena cava and the artery from the great artery, but those that reach the left testis in the male or the

35 Ibn al-Nafīs, *Commentary on the Aphorisms of Hippocrates (Sharḥ Fuṣūl Abuqrāṭ)*, ed. Zaydan (1991a) 116–9; Abou Aly (2000: 141–3); cf. [Hippocrates], *Aphorisms*, 1.11, ed. Littré (1844) IV.464.11–13 = ed. Jones (1931) 102.23–104.3.

36 Abou Aly (2000: 143–5).

37 [Hippocrates], *Kitāb al-Fuṣūl vers. arab.*, 5.47, ed. Tytler (1832) 48; [Hippocrates], *Aphorisms*, 5.48, ed. Littré (1844) IV.550.1–2 = ed. and tr. Jones (1931) 170.10–12.

38 See Preus (1977: 80–1); Boylan (1986: 66–7).

uterus on that side of the female ... do not start from the great vessels themselves, but from the vessels passing to the kidneys.³⁹

Galen's right-left theory of sex differentiation, particularly its anatomical justification, was accepted by many Islamic physicians, and can be found in Avicenna's *Canon of Medicine* as well as in Ibn Abī Šādiq's *Commentary* on this aphorism.⁴⁰ Ibn al-Nafis, however, rejected Galen's anatomical and physiological claims with regards to the renal and gonadal veins and arteries. This led him to interpret *Aphorisms* 5.48 to both reject the Galenic understanding of sex differentiation while validating the explicit Hippocratic reference to womb heat in determining the sex of the foetus:

For most people, their right side is stronger and warmer, and such is also the case for the right side of the womb. The semen that descends from the left testicle of the man, at the time of intercourse, faces the right [side] of the womb. As such it is warmer than the semen in the right testicle, because the left testicle alone possesses the heat from what faces it. Hence, when the semen settles in the right side of the womb, it generates primarily a male, unless [the semen] is weak or extremely cold. And when it settles in the left side [of the womb], it generates primarily a female, unless [the semen] is hot and strong.⁴¹

The anatomical understanding of the gonads, their veins and arteries that undergirds this interpretation of the Hippocratic aphorism is found in Ibn al-Nafis' *Commentary on the Anatomy of the Canon*.⁴² To summarise, although Ibn al-Nafis concurs with Galen (and Avicenna) that the gonadal and renal vessels possess a left – right asymmetry in the body, he does not assign a prominent role in sex differentiation to this asymmetry. Instead, according to Ibn al-Nafis, the left kidney receives an additional small artery directly from the aorta in order to warm it up further so that the material drawn from the left kidney by the testes and/or ovaries is not that different in temperament from material drawn from the right kidney and so can still produce viable semen. The onus for producing male fetuses rather falls upon the right side of the womb, since by being situated inside of the body, it is constantly warmed by the liver and

39 Galen, *UP*, 14.7, ed. Kühn (1822) IV.170–1 = ed. Helmreich (1909) II.306; tr. May (1968: II.635).

40 Fancy (2017: 159–61).

41 Ibn al-Nafis, *Commentary on the Aphorisms of Hippocrates (Sharḥ Fuṣūl Abuqrāṭ)*, ed. Zaydan (1991a) 390–1.

42 The details are provided in Fancy (2017: 162–9).

other warm parts on that side. As he summarily states in his *Commentary on the Canon*:

[Ibn Sinā's] saying: 'Similarly, when the semen is placed in the right womb' it tends primarily to being male even if the semen is extracted from the left ovary (*bayḍa*) since the right side of the womb is warmer based on what we mentioned earlier that members on this side are warmer. Since this is the case, it must increase the heat of the semen necessarily.⁴³

The Hippocratic aphorism is validated, but using Ibn al-Nafis' new anatomical and physiological understanding of generation and sex differentiation. The aphorism's authority is also used to reject the claims of Galen (and Avicenna), and in doing so, Ibn al-Nafis intentionally (and successfully) loosens Galen's interpretive hold over the Hippocratic corpus.

To sum up, Ibn al-Nafis found much to admire in Galen's works, especially the anatomical writings. In his own *Commentary on the Anatomy of the Canon*, Ibn al-Nafis extensively used Galen's writings, including paraphrasing passages from *On Anatomical Procedures* on how to prepare specimens. Yet, he also found many faults in them, at the level of both content and style. Ibn al-Nafis hated Galen's prolixity and adopted a more compact and concise style in his own commentaries. This may explain why he never wrote commentaries on any of Galen's works. In fact, even though he composed a treatise entitled, *Treatise on the Function of the Parts*, it only shares the name of Galen's treatise; Ibn al-Nafis' text is a tiny fraction of the size of Galen's work and structured entirely differently.⁴⁴ In terms of content, Ibn al-Nafis often found Galen's opinions and arguments wanting, especially pertaining to aspects of medical theory, which led him to put forth new understandings of cardiovascular physiology, pulse, chief organs, generation, and sex differentiation.⁴⁵ He was never awed by the authority of Galen (nor of Aristotle or Avicenna) and felt comfortable attacking Galen's arguments while investigating medical 'truths'. In fact, the only authority he revered was Hippocrates, but even then he ensured that he reinterpreted Hippocrates in light of his own (new) medical theories rather than relying on Galen's interpretations. What remains to be investigated is how subsequent medical writers and commentators responded

43 Ibn al-Nafis, *Commentary on the Canon (Sharḥ al-Qānūn)*, Wellcome Library MS Ar. 51, fol. 458b22–4.

44 Ibn al-Nafis, *Treatise on the Function of the Parts (Risāla fī manāfi al-a'ḍā')*, ed. Zaydan (1991b).

45 See Fancy (2013a: chapters 4 and 5).

to Ibn al-Nafīs' extensive critique of Galenic theory and his non-Galenic interpretations of Hippocrates.⁴⁶

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⁴⁶ I am currently engaged in a long-term project on Arabic medical commentaries on the *Canon* and *Epitome* produced between 1200 and 1520. Thus far, my work has revealed that later commentators were not only aware that Ibn al-Nafīs had provided accounts of pulse and generation different to those found in Galen and Avicenna, but many also followed Ibn al-Nafīs in rejecting Galen's and Avicenna's accounts; see Fancy (2013b; 2018a; 2018b).

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The Reception of Galen in Ibn Abī Uṣaybi‘ah

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Ibn Abī Uṣaybi‘ah’s *‘Uyūn al-anbā’ fī ṭabaqāt al-aṭibbā’* (*Sources of Information on the Classes of Physicians*),¹ is of paramount importance as it provides an in-depth record on the reception of Greek medicine in the Arabic tradition at the turning point between the Ayyūbid and Mamlūk eras.² Ibn Abī Uṣaybi‘ah also supplies a comprehensive list of Galen’s treatises to which he had access in his day through Arabic translations, even though some of them are unknown or lost to the modern reader. Furthermore, one must keep in mind not only that the first six chapters of Ibn Abī Uṣaybi‘ah’s book, out of a total of fifteen, deal with Greek medicine from its origins to the Alexandrian era, but also that Galen is quoted by name more than five hundred times in the entire book.³ Of even more significance, despite its title, ‘On the classes of physicians who lived from the time of Galen and shortly after him’,⁴ chapter 5, which is thirty-three pages in August Müller’s edition, is entirely devoted to Galen.⁵

One must also bear in mind that a work of such a broad encyclopaedic scope as Ibn Abī Uṣaybi‘ah’s *‘Uyūn al-anbā’* emerges as a typical illustration of a time and a place, namely the turn of the thirteenth century in Damascus and Cairo, where resource materials in medicine were both abundant in number and easy to access in libraries. Emma Gannagé reveals several characteristic examples

- 1 The text of the reference edition has been edited by Müller (1882–4) and reprinted by Sezgin (1995). ‘Sources of Information’ is the most widely accepted translation of Ibn Abī Uṣaybi‘ah’s work, even though one should probably read more accurately *‘Essential’ Information on the Classes of Physicians*. Of exceptional importance is Kopf’s English translation of Ibn Abī Uṣaybi‘ah’s work (1971). It can be found as a typescript in the collections of the US National Library of Medicine under call number MS C 294. Kopf did not translate all the text, and not all the verses are translated. There are also a number of errors. However, this translation, just as Kopf left it, is invaluable to scholars. The writer is currently working on a revised edition of that work with the support of CNRS UMR Unit 8167 Orient & Méditerranée. All translations from Arabic and Greek are the writer’s.
- 2 On Ibn Abī Uṣaybi‘ah (d. 668/1270), see Vernet (2012); Brockelmann (1943: 1.325; and Supplement, 1937: 1.560).
- 3 Müller’s edition (1882–4) is about 600 pages in Arabic.
- 4 Ibn Abī Uṣaybi‘ah, *‘Uyūn al-anbā’ fī ṭabaqāt al-aṭibbā’* (*Sources of Information on the Classes of Physicians*), 5, ed. Müller (1882) 1.71.
- 5 Ibn Abī Uṣaybi‘ah, *‘Uyūn al-anbā’*, 5, ed. Müller (1882) 1.71–103. Those who were ‘the celebrated physicians [who lived] shortly after the death of Galen’ are all found in the last seventeen lines of chapter 5.

of this period through As'ad al-Dīn Ya'qūb ibn Ishāq al-Maḥallī (d. c. 1260), a Jewish physician who lived and practised in Damascus.⁶ Going through a yet unedited collection of treatises by As'ad al-Maḥallī, she quotes a passage where As'ad al-Maḥallī states that just after a dispute about Aristotle's theory of elements that took place in the *majlis* of Muḥadhdhab al-Dīn 'Abd al-Raḥīm ibn 'Alī, the master of Ibn Abī Uṣaybi'ah and also known as al-Dakhwar,⁷ while he had not at hand the commentary of Alexander of Aphrodisias on Aristotle's *On Generation and Corruption*, he obtained it that very night so that he could read it.⁸ Not only does this show that many books were available in the libraries, but it also sheds some light on topics raised by the physicians during the debates that took place in the 'teaching facilities' attached to some hospitals:⁹ as this example shows, purely philological issues were very much under discussion.

Galen and Galen's books were without doubt the most debated subjects addressed by Ibn Abī Uṣaybi'ah. What he relates when he began studying under Muḥadhdhab al-Dīn highlights that his master's teaching was primarily based on Galen's books:

When the master Muḥadhdhab al-Dīn was in Damascus, he started to teach the art of medicine. Many of the best physicians and others joined him to study under him. I was myself also in Damascus with the intention of studying under him. And thereupon before that time, I had been serving in the military camp as my father and the wise (*al-ḥakīm*) Muḥadhdhab al-Dīn were serving under the great sultan. So I carried on resorting to him as one of the group [of students], and I began to study Galen. His knowledge extended to every book that was being studied under him,

6 Gannagé (2011: 250–4). See Ibn Abī Uṣaybi'ah, *Uyūn al-anbā'*, 14, ed. Müller (1884) 11.118. Ibn Abī Uṣaybi'ah may have met him in person. He says that there were 'frequent topics of arguments and little affability' between this man and some of the best physicians in Cairo although he and his paternal uncle – Rashīd al-Dīn 'Alī ibn Khalīfah (see Ibn Abī Uṣaybi'ah, *Uyūn al-anbā'*, 15, ed. Müller (1884) 11.246–59) – were friends.

7 The passage is from ms. Istanbul, Nuruosmaniye 3589, fol. 4. See Gannagé (2011: 250, text 1).

8 Muḥadhdhab al-Dīn 'Abd al-Raḥīm ibn 'Alī Abū Muḥammad (Ibn Abī Uṣaybi'ah, *Uyūn al-anbā'*, 15, ed. Müller (1884) 11.239–46). On Muḥadhdhab al-Dīn's *majlis*, which was created by the Ayyūbid ruler al-Malik al-Ashraf Abū al-Faṭḥ Mūsā ibn al-Malik al-'Ādil Abū Bakr ibn Ayyūb (d. 635/1237), see Pormann and Savage-Smith (2010: 83). However, Ibn Abī Uṣaybi'ah, *Uyūn al-anbā'*, 15, ed. Müller (1884) 11.244.10–12, states exactly as follows: 'He [Muḥadhdhab al-Dīn] arrived in Damascus when al-Malik al-Ashraf took possession of it in the year 626/1229, while he was in company with him. He appointed him to the post of head (*r'āsah*) of medicine – a position that he kept for a long period of time – and he created for him (*wa-ja'ala la-hu*) a *majlis* for teaching the art of medicine'. See also below on this page.

9 Franz Rosenthal, quoted from Pormann and Savage-Smith (2010: 96–101).

whether it was Galen's or others'. He admired Galen's books the most. When he heard anything from Galen concerning the diseases and their cures or the fundamentals of the medicine, he said: 'That is medicine!'¹⁰

We also know that Muhaddhab al-Dīn himself started off as a copyist; he copied many books dealing primarily with medicine. Ibn Abī Uṣaybi'ah could access more than a hundred volumes of his hand.¹¹ Ibn Abī Uṣaybi'ah, also followed closely at the same time Muwaffaq al-Dīn ibn al-Maṭrān (d. 587/1191),¹² a Christian who converted to Islam in 585/1189, two years before his death.¹³ Ibn al-Maṭrān spent most of his life in Damascus and was known as a copyist who took great care in correcting the books. He was also a great collector of books; about ten thousand, dealing with medicine and other sciences, were found in his library when he died.¹⁴ The connections between these physicians and learned men also offer interesting insights into the reception of Galen at that time. It so happens that all three men were acquainted with a fourth physician, Muwaffaq al-Dīn Ya'qūb ibn Siqlāb (d. 625/1228),¹⁵ a Christian physician who was known, says Ibn Abī Uṣaybi'ah, as 'the most prominent man of his time in the science, the understanding, [the art of] establishing the authentic meanings and the knowledge of Galen's books'.¹⁶

Two valuable items of information emerge from the biographical note of Muwaffaq al-Dīn. First, the anecdotes related about him involve Ibn Abī Uṣaybi'ah himself, who must have known him very well because he worked under him at the start of his medical studies. Ibn Abī Uṣaybi'ah says the following about Muwaffaq al-Dīn's knowledge of Greek:

10 Ibn Abī Uṣaybi'ah, *Uyūn al-anbā'*, 15, ed. Müller (1884) II.242.15–21.

11 Ibn Abī Uṣaybi'ah, *Uyūn al-anbā'*, 15, ed. Müller (1884) II.239.23–4: 'I have seen about a hundred volumes of his [hand] or more on medicine or other [sciences]'.
 12 'The metropolitan'. I follow here Rosenthal (1951: 142) who referred to him as Ibn al-Maṭrān. However, he is often referred to as Al-Muṭrān in modern literature. See Lane (1885: VII.2722, col. 2), where it is said that *maṭrān* was 'sometimes pronounced' *miṭrān* and *muṭrān*. For *maṭrān*, see Lane (1865: II.369, col. 3, s. v. *jāthalīq*) and Lane (1872: IV.1383, col. 3, s. v. *usquff*).

13 Ibn Abī Uṣaybi'ah, *Uyūn al-anbā'*, 15, ed. Müller (1884) II.175–81.
 14 Ibn Abī Uṣaybi'ah, *Uyūn al-anbā'*, 15, ed. Müller (1884) II.178.22–4: 'Muwaffaq al-Dīn ibn al-Maṭrān was highly interested in acquiring books, so that when he died the volumes dealing with medicine and other [sciences] that were found in his bookcase were nearly ten thousand in number in addition to those he copied himself. He was also utterly careful in copying and correcting the books'.

15 Ibn Abī Uṣaybi'ah, *Uyūn al-anbā'*, 15, ed. Müller (1884) II.214–16. Read *Siqlāb* as in *Tāj al-'arūs* (*The Crown of the Bride*) by al-Zabīdī, ed. 'Abd al-Sattār Aḥmad Farrāj et al. (1987) III.64.
 16 Ibn Abī Uṣaybi'ah, *Uyūn al-anbā'*, 15, ed. Müller (1884) II.214.20–1.

The wise (*al-ḥakīm*) Ya'qūb also thoroughly knew Greek and was an expert in this language and the translation of its wording into Arabic. He owned some of the books of Galen written in Greek, such as *The Art of Healing* (*Ḥīlat al-bur'*, *De methodo medendi*), *The Causes and the Symptoms* (*al-'Ilal wa-al-a'rāḍ*, *De causis et symptomatis*), among other books that he was continuously reading and studying.¹⁷

This in-depth knowledge of Greek and of Galen's books in the original Greek should also be viewed within the larger framework of medical education in Ibn Abī Uṣaybi'ah's time. On this account, the way Ibn Abī Uṣaybi'ah himself carried out the study of Hippocrates' and Galen's books under Muwaffaq al-Dīn is a rich source of information about the methods employed and how thoroughly the texts were scrutinised:

From what I can account for with respect to him is the following: I was studying under him at the start of my medical studies ... a passage of Hippocrates, knowing it by heart and asking for a commentary, and I was able to see, from the outstanding way he applied himself to the commentary, the rigor in his searching to the utmost the meaning [of the words] with the highest degree of excellence, concision and completeness in the expression, some matter of meaning that no man ventured upon or was able to reach. Then, he recounted the choice part (*khulāṣah*) of what he had mentioned and the essential import of what he had said, until no passage in the words of Hippocrates was left that he had not extensively commented on in such a way that there might not be any exceeding profuseness. Then he mentioned the text of Galen's commentary on that section unremittingly until the end, and returning to Galen's commentary on that [subject], I found that he recited altogether what Galen had said on this passage (*fī dhālika al-ma'na*), and many were the sentences of Galen that he mentioned word for word (*bi-a'yāni-hā*) without adding or omitting anything. Such was the feat that only he had been known to perform in his time!¹⁸

The final clause of this passage clearly shows that Ibn Abī Uṣaybi'ah reckons this method of scrutinising the sources to be a paragon of scholarship. It is as a whole very interesting because it casts Ibn Abī Uṣaybi'ah as a classic disciple, whose character is defined by his attempts at studying the words

17 Ibn Abī Uṣaybi'ah, *Uyūn al-anbā'*, 15, ed. Müller (1884) II.215.17–19.

18 Ibn Abī Uṣaybi'ah, *Uyūn al-anbā'*, 15, ed. Müller (1884) II.214.29–215.5.

of Hippocrates, which are in essence difficult to understand. It is to be noted that most of this passage touches on the way Muwaffaq al-Dīn delivers his own explanation of the words of Hippocrates in two steps: first with a combination of extensiveness and concision and then in a summarised version,¹⁹ which was certainly meant to be learned by heart by the disciple. As for Galen, he is mentioned only in the last lines of this narrative, from which nonetheless essential information emerges. As can be seen, no explanation whatsoever is either given or even expected about Galen himself. As a matter of fact, the only words related to the use of Galen by Muwaffaq al-Dīn are the following: 'Then he mentioned the text of Galen's commentary on that section unremittingly until the end'.²⁰ The rest of the text only emphasises the feat of Muwaffaq al-Dīn, who has come off stage so that the disciple, left alone, might dedicate his time to check Galen's words that his master had just quoted at length without omitting any of them. So Galen's text is distinguished by two dominant features. First, it is an explanation of Hippocrates' words, that delivered by the master, but unlike the latter, it does not require summary or explanation. It only requires being committed to memory. Second, which will prove of paramount importance here, as the end of the passage shows, Galen is meant to be recalled word for word, and all by Ibn Abī Uṣaybī'ah:

On many occasions, when he was staying in Damascus, he [Muwaffaq al-Dīn Ya'qūb ibn Siqlāb] met the master (*al-shaykh*) Muhadhdhab al-Dīn at the place where the physicians sat in the sultan's residence, and they would discuss research issues with regard to medical subjects. The master (*al-shaykh*) Muhadhdhab al-Dīn was clearer in his speech, stronger in eloquence, and better in research, while the practitioner (*al-hakīm*) Ya'qūb was steadier, more distinct in speaking, and could draw on a broader tradition, because he was in the position of an interpreter who [was able to] recall what Galen had mentioned about medicine in all of his books.²¹

Unlike the previous scene which was about teaching, this one deals with research. As the passage shows, active discussions between physicians, regardless of religion, were facilitated by the sultan himself, who provided a special place at his residence to be used as a *majlis* for research.²² Certainly this presentation

19 See in the passage quoted above: 'Then, he gave the choice part (*khulāṣah*) of what he had mentioned'.

20 See above on the preceding page.

21 Ibn Abī Uṣaybī'ah, *Uyūn al-anbā'*, 15, ed. Müller (1884) II.215,5–10.

22 This research *majlis* should not be confused with the one that al-Malik al-Ashraf created for Muhadhdhab al-Dīn after 626/1229 for teaching medicine (see n.8): Muwaffaq al-Dīn

poses a clear distinction between the two characters; the Muslim physician is referred to as 'the master' (*al-shaykh*), while the Christian physician is called *al-ḥakīm*, which in contrast is to be understood as 'the practitioner'.²³ Similarly, the steadiness of the latter and his care for accuracy do not compare with the strength in eloquence of the former and his skills as a researcher. That aside, this scene is important for understanding how Galen's texts were studied in the medical community during Ibn Abī Uṣaybi'ah's time. With the invaluable help of colleagues who were able to read Greek, prominent figures in medical research such as Muḥadhdhab al-Dīn not only had direct access to the Greek sources, but also always concerned themselves with checking the Arabic versions of Galen they were studying against the Greek sources without neglecting the variant readings.²⁴

Finally, Ibn Abī Uṣaybi'ah lays stress upon the extent of the Greek sources of Galen available during his time by adding that Muwaffaq al-Dīn was able to recall what Galen 'had mentioned about medicine in *all of his books*'.²⁵ The importance of this remark is twofold. First, it indicates that all of the manuscripts of Galen were arguably available in Greek to those who could read them. Second, it completes the picture of the physicians at work reading Galen: the Christians naturally read Galen in the Greek original, while the Muslims certainly read him in translation, but also worked in close collaboration with the Christians who could enlighten difficult passages through the Greek or check the variant readings recorded by the Greek manuscripts. Thus, abundance in number and ease of access are the two dominant features that distinguish the reception of Galen at that time. Therefore, a subsequent, high level of scholarship on, and scrutiny of, Galen's books should come as no surprise.

had died about one year before, in 626/1228 (Ibn Abī Uṣaybi'ah, *ʿUyūn al-anbāʾ*, 15, ed. Müller (1882–4) 11.216.9–10) and so never got to know it. This passage, together with the anecdotes relating to Asʿad al-Maḥallī, p. 280, shows that the physicians – Muslims, Jews, Christians – worked and taught in close collaboration at this time. See, however, Eddé (1995: 93), to be approached with caution on this point.

23 Muwaffaq al-Dīn Yaʿqūb ibn Siqlāb's distinction against the former is confirmed by the sentence that immediately follows: "As regards the therapeutics" of the physician (*al-ḥakīm*) Yaʿqūb, they were of the utmost excellence and accomplishment' (Ibn Abī Uṣaybi'ah, *ʿUyūn al-anbāʾ*, 15, ed. Müller [1884] 11.215.10).

24 This is how the reference to Muwaffaq al-Dīn as a man who 'could draw on a broader tradition' (*awsa'a naqlan*, see on the preceding page) should be understood. While the Arabic *naql* conveys the general idea of 'translating' or 'transmitting', its meaning is specified by the rest of the sentence: 'because (*li-anna-hu*) he was in the position of an interpreter who was able to recall (*al-tarjūmān al-mustaḥdīr*)' (Ibn Abī Uṣaybi'ah, *ʿUyūn al-anbāʾ*, 15, ed. Müller [1884] 11.215.9).

25 See on the facing page.

As the quotations of Galen in *ʿUyūn al-anbāʾ* are quite numerous, they provide as a whole a good indication of Ibn Abī Uṣaybī'ah's faithfulness in reproducing his sources. They refer to complex and various situations. Some come from treatises the Greek originals of which are lost, others refer to pseudo-Galenic books or to titles that are otherwise unknown, while many of them come from books that are preserved in Greek. In the latter instance, one should further distinguish between quotes Ibn Abī Uṣaybī'ah himself provides and those found in larger extracts quoted from other Arabic sources.

Most of the quotations of Galen are found in chapter 5 of *ʿUyūn al-anbāʾ*, which, as noted at the outset, is almost entirely devoted to Galen. Apart from that chapter, all the remaining quotations²⁶ are found in chapter 1, 'How the art of medicine was discovered and first came into existence',²⁷ chapter 2, 'On the classes of physicians to whom were revealed some parts of the medical art and who started it' (in the section devoted to Asclepius),²⁸ and chapter 4, 'On the classes of Greek physicians to whom Hippocrates made known the art of medicine' (in the section devoted to Hippocrates).²⁹

As mentioned above, Ibn Abī Uṣaybī'ah's *ʿUyūn al-anbāʾ* provides many fragments of Galen for which the Greek originals are now lost. Surely, among the most important are the fragments of the *Commentary on Hippocrates' 'Oath'* which have been collected, translated and commented upon by Rosenthal.³⁰ The recent discovery of a text attributed to Galen's commentary will hopefully allow us to assess how the fragments compare with it.³¹

Of particular importance are the three long quotations from Galen's *Recognising the Best Physician*.³² Gotthard Strohmaier cites this work, lost in

26 With the exception of one in the last chapter, Ibn Abī Uṣaybī'ah, *ʿUyūn al-anbāʾ*, 15, ed. Müller (1884) 11.249.12–17 (biographical note on Ibn Abī Uṣaybī'ah's uncle, Rashīd al-Dīn 'Alī ibn Khalifah), from Galen's *Recognising the Best Physician*. See below on the following page.

27 Ibn Abī Uṣaybī'ah, *ʿUyūn al-anbāʾ*, 1, ed. Müller (1882) 1.4.

28 Ibn Abī Uṣaybī'ah, *ʿUyūn al-anbāʾ*, 2, ed. Müller (1882) 1.15.

29 Ibn Abī Uṣaybī'ah, *ʿUyūn al-anbāʾ*, 4, ed. Müller (1882) 1.24.

30 Rosenthal (1956); see also Strohmaier (1968). To Rosenthal's remarks may be added the yet unpublished annotations of Martin Plessner found in Kopf (1971: 1–52). On page 7, Plessner remarks that Rosenthal erroneously omitted the quotation at the end of his fr. 1.b (Rosenthal 1956: 59 [last line]). Another short quotation may be added to this material from the *Sayings* gathered in the chapter devoted to Galen. See Ibn Abī Uṣaybī'ah, *ʿUyūn al-anbāʾ*, 5, ed. Müller (1882) 1.90.19: 'Galen said in his commentary on Hippocrates' book Oaths and Covenant ...'. On the use of the two words '*Oaths and Covenant*', see Rosenthal (1956: 54 and fr. 2.e, 64 and 3.a, 77).

31 See Mouton and Magdelaine (2016).

32 Ḥunayn, *Risālah*, ed. Bergsträsser (1925) 112. See n.26 for the third reference; the first two are found in chapter 5 (Ibn Abī Uṣaybī'ah, *ʿUyūn al-anbāʾ*, 5, ed. Müller [1882] 1.80.6;

Greek but preserved in Arabic,³³ as an example of Ibn Abī Uṣaybi‘ah’s faithfulness to his textual sources. Two points are worth emphasising here. The first – which will prove of great importance in determining how Galen is used by Ibn Abī Uṣaybi‘ah – is that the way the quotations of *Recognising the Best Physician* are inserted shows that they are all first-hand quotations, taken by Ibn Abī Uṣaybi‘ah from his Arabic manuscripts of Galen. In chapter 5, Ibn Abī Uṣaybi‘ah follows the same pattern as in the preceding biographies of Hippocrates, Plato, and Aristotle, by quoting first from Ibn Juljul al-Andalusī,³⁴ and then from al-Mubashshir ibn Fātik.³⁵ The first reference to Galen’s *Recognising the Best Physician* is found at 1.80.6. At this point of his text, Ibn Abī Uṣaybi‘ah is using the book of Ibn Juljul since 1.77.20.³⁶ But just after having inserted a few lines,³⁷ he breaks Ibn Juljul’s text by inserting a long story about Galen’s residence, which is entitled *maskan Jālīnūs* in the manuscripts. Then, at 1.80.2, Ibn Abī Uṣaybi‘ah continues Ibn Juljul’s story from where he left off,³⁸ and breaks it again to insert the first quotation of Galen, *Recognising the Best Physician*.³⁹

1.85.18), and all are under the title *fi miḥnati al-ṭabībī al-fādili*, although Ibn Abī Uṣaybi‘ah gives the same title as Ḥunayn ibn Ishāq in his own list (Ibn Abī Uṣaybi‘ah, *‘Uyūn al-anbā’*, 5, ed. Müller [1882] 1.100.9).

33 See Strohmaier (2002: 117). The Arabic version has been edited by Iskandar (1988).

34 On Abū Dā‘ūd Sulaymān ibn Ḥasān al-Andalusī, known as Ibn Juljul, and the *Ṭabaqāt al-aṭibbā’ wa-al-ḥukamā’* (*On the Classes of Physicians and Wise Men*), from which Ibn Abī Uṣaybi‘ah quotes, see the edition of Fu‘āt Sayyid (1955). Ibn Juljul died after 384/994; see Fu‘āt Sayyid (1955: xii–xvii).

35 Ibn Abī Uṣaybi‘ah quotes from al-Mubashshir ibn Fātik’s *Mukhtār al-ḥikam wa-maḥāsīn al-kalim* (*Choicest Maxims and Best Sayings*). See the edition of Badawī (1980), to be read in conjunction with Rosenthal (1960). On the date of death of al-Mubashshir ibn Fātik, ‘who lived through most of the eleventh century’, see Rosenthal (1960: 137). The patterns followed by Ibn Abī Uṣaybi‘ah are as follows: Ibn Abī Uṣaybi‘ah, *‘Uyūn al-anbā’*, 4–5, ed. Müller (1882) Hippocrates: 1.27.23 (Ibn Juljul), 1.28.6 (al-Mubashshir); Plato: 1.49.29 (Ibn Juljul), 1.50.10 (al-Mubashshir); Aristotle: 1.54.7 (Ibn Juljul), 1.56.2 (al-Mubashshir); Galen: 1.77.20 (Ibn Juljul), 1.82.11 (al-Mubashshir).

36 See above, n.35.

37 Ibn Abī Uṣaybi‘ah, *‘Uyūn al-anbā’*, 5, ed. Müller (1882) 1.77.20–6 ≈ Ibn Juljul, *Ṭabaqāt*, ed. Fu‘āt Sayyid (1955) 41.4–10.

38 Ibn Abī Uṣaybi‘ah, *‘Uyūn al-anbā’*, 5, ed. Müller (1882) 1.80.2–5 ≈ Ibn Juljul, *Ṭabaqāt*, ed. Fu‘āt Sayyid (1955) 41.9–42.1.

39 The same remark applies to the section where Ibn Abī Uṣaybi‘ah uses al-Mubashshir ibn Fātik’s text, *‘Uyūn al-anbā’*, 5, ed. Müller (1882) 1.82.11 ≈ al-Mubashshir, *Mukhtār al-ḥikam*, ed. Badawī (1980) 289.6, which is broken at two points: first at 1.82.19 ≈ al-Mubashshir, *Mukhtār al-ḥikam*, 298.15 with several accounts on the circumstances of the death of Galen, then at 83.16 ≈ al-Mubashshir, *Mukhtār al-ḥikam*, 290.10 with a long quotation from Galen, *On Good Humour and Bad Humour*, 1, ed. Kühn (1823) v1.755.6–757.13 = ed. Helmreich (1923) 392.16–393.28, which is not mentioned by Helmreich in his edition. On al-Mubashshir’s text, see also below, p. 296f.

Finally, the text of Ibn Juljul resumes at 1.81.32, just after the latter quotation, and finishes at 1.82.11, at which point Ibn Abī Uṣaybi'ah starts using al-Mubashshir ibn Fātik's text.⁴⁰ The other two insertions of Galen, *Recognising the Best Physician*, also unquestionably come from Ibn Abī Uṣaybi'ah's manuscripts of Galen. The second one is found where Ibn Abī Uṣaybi'ah, having stopped using al-Mubashshir ibn Fātik's text, carries on with remarks of his own,⁴¹ and the third in the biographical note devoted to his uncle.⁴²

The second point concerns the faithfulness of the text preserved by Ibn Abī Uṣaybi'ah. As demonstrated by Albert Iskandar,⁴³ Ibn Abī Uṣaybi'ah must have had access to a 'much earlier manuscript' than the two that constitute the direct tradition. Furthermore, this earlier manuscript derives from an ancestor it shares with one of the manuscripts of the direct tradition that is less reliable. This must provide some confidence when it comes to examining other passages preserved either in Greek or in Arabic or in both languages.

One may examine in this regard the extracts presented in the context of the discussion of Galen's date of birth as chapter 5 opens. This discussion takes up a significant part of the chapter, from 1.71.15, where Ibn Abī Uṣaybi'ah mentions that Galen, according to John the Grammarian,⁴⁴ lived 'eighty-seven years, seventeen as a young man and a student, and seventy as a scholar and a teacher',⁴⁵ to 1.77.11: as noted previously, Ibn Abī Uṣaybi'ah starts using Ibn Juljul's book just a few lines below that point. Here, he first explains that John the Grammarian's division of Galen's life into two periods is unacceptable because it is contradicted by Galen's own words, and then quotes the following from *On the Order of My Own Books*:

My father constantly instructed me in the subjects that he knew well (*bi-mā kāna yuḥsinuhu*) – geometry (*al-handasah*), arithmetic (*al-ḥisāb*) and reckoning (*al-riyāḍiyyāt*), in which young men are usually trained – until I reached my fifteenth year. Then he directed me toward the study of logic. By that time, he had in mind that I should study philosophy only. Then he

40 Ibn Abī Uṣaybi'ah, *ʿUyūn al-anbāʾ*, 5, ed. Müller (1882) 1.81.32–82.11 ≈ Ibn Juljul, *Ṭabaqāt*, ed. Fuʾāt Sayyid (1955) 43.5–18. About thirty lines of Ibn Juljul's text have been discarded by Ibn Abī Uṣaybi'ah.

41 Ibn Abī Uṣaybi'ah, *ʿUyūn al-anbāʾ*, 5, ed. Müller (1882) 1.85.8–9: 'I say: To sum up, there are many other anecdotes about Galen'. The full extract is provided below, p. 299. The quotation of Galen, *Recognising the Best Physician* starts ten lines later.

42 See above, n.26.

43 Iskandar (1988: 17–18).

44 John the Grammarian (d. c. AD 575), known in the Arabic sources as *Yahyá al-Nahwī*, who was one of the epitomisers of Galen in the School of Alexandria. See Wisnovsky (2012).

45 For the full quote, Ibn Abī Uṣaybi'ah, *ʿUyūn al-anbāʾ*, 5, ed. Müller (1882) 1.71.15–17.

had a clear vision (*fa-ra'ū ru'yā*) which led him to make me study medicine and he directed me to the art of medicine. I was by then seventeen years old.⁴⁶

This passage calls for some preliminary remarks about the context in which it is found. First, it is illustrative of Ibn Abī Uṣaybi'ah's high level of scholarship regarding primary sources,⁴⁷ as evidenced by his introductory words:

That some statement be agreed upon by someone like Galen about himself [must] prevail over someone else's statement agreeing about him. Here follows a transcript (*naṣṣ*) of what Galen has mentioned in his book *On the Order in Which His Books Should Be Read*.⁴⁸

Second, one must keep in mind that by the words 'Here follows a transcript (*naṣṣ*)', Ibn Abī Uṣaybi'ah is clearly indicating that he is about to quote literally from Galen's *On My Own Books* directly from his own copy. This makes sense since he intends to oppose Galen's words to John the Grammarian's. Unfortunately, Ḥunayn's Arabic translation of that passage has fallen away,⁴⁹ but as a whole Ibn Abī Uṣaybi'ah's quotation compares very well with the Greek original. The only difference of some importance between this quotation and the Greek original is about the subjects that Galen's father directed his son to, for Galen, *On the Order of My Own Books* reads 'arithmetic, reckoning and grammar'⁵⁰ instead of 'geometry, arithmetic and reckoning'. But the comparison of this passage with Galen's, *On My Own Books*, leads to the conclusion that there is no imaginative relation of Ibn Abī Uṣaybi'ah's in this quotation. In quite the same context about the use of demonstration, Galen, returning to the issue of the education he acquired from his father, mentions the following: 'geometry, arithmetic and reckoning',⁵¹ that is the same sciences in the same order as they are found in Ibn Abī Uṣaybi'ah.⁵² As regards the reception

46 Ibn Abī Uṣaybi'ah, *Uyūn al-anbā'*, 5, ed. Müller (1882) 1.71.23–6 ≈ Galen, *Ord. Lib. Prop.*, ed. Kühn (1830) XIX.59 = 4.4, ed. Boudon-Millot (2007) 99.21–101.4.

47 See above on pp. 282–4.

48 Ibn Abī Uṣaybi'ah, *Uyūn al-anbā'*, 5, ed. Müller (1882) 1.77.21–3.

49 See Boudon-Millot (2007: 50–62).

50 Galen, *Ord. Lib. Prop.*, ed. Kühn (1830), XIX.59.4–5 = 4.4, ed. Boudon-Millot (2007) 99.21–2: *arithmētikēs te kai logikēs kai grammatikēs theōrias*.

51 Galen, *Lib. Prop.*, 10, ed. Kühn (1830) XIX.40.5–6 = 14.4, ed. Boudon-Millot (2007) 164.26–7: *geōmetrian arithmētikēn te kai logistikēn*.

52 In the quotation translated above on the previous page from Ibn Abī Uṣaybi'ah, *Uyūn al-anbā'*, 5, ed. Müller (1882) 1.71.15–17, the phrase 'in the subjects that he knew well' (*bi-mā kāna yuḥsinu-hu*, see on the preceding page) is further evidence of this connection,

of Galen, the interest of this example is twofold. It shows that surely, Ibn Abī Uṣaybī'ah followed his sources to the letter. Nonetheless, even if one admits that he diligently drew such quotations from Ḥunayn's translation, one must also keep in mind that four centuries have gone by since Ḥunayn made it at the time when it was used. Not surprisingly then, as scholars studied Galen's texts, the works were affected by natural processes of contamination, resulting from the many comparisons that were carried on, of which *'Uyūn al-anbā'* is the direct witness. As such, these extracts are worth taking into consideration in modern editions, as will be apparent from the foregoing.

To return to the discussion of Galen's date of birth, two lengthy quotations from Galen's, *On My Own Books* are found in the subsequent pages,⁵³ but again, by no means should one criticise Ibn Abī Uṣaybī'ah for not being close enough to the original, for the simple reason that neither of these quotations is actually his own. Both are included in a long statement taken bodily from 'Ubayd Allāh ibn Bukhtīshū'.⁵⁴ Actually, as already seen, everything from 1.71.15 to 1.77.11, including 'Ubayd Allāh ibn Jabra'īl's statement, is about Galen's date of birth. Ibn Abī Uṣaybī'ah's course of thought is quite apparent. Having refuted John the Grammarian's opinion, he provides a summary of what Ishāq ibn Ḥunayn⁵⁵ said about that matter and quotes from Zāhir al-Dīn al-Bayhaqī's⁵⁶ *Reservoirs of Experiences and Wonders of Wonders*,⁵⁷ both of whom placed Galen at the time of Christ. Then comes the statement of 'Ubayd Allāh ibn Jabra'īl, exhibited as the chief evidence. One must pay particular attention the introduction by Ibn Abī Uṣaybī'ah:

for this is not found in Galen, *Ord. Lib. Prop.*, 4.4, whereas Galen adds in *Lib. Prop.*, 10, ed. Kühn (1830) XIX.40 = 14.4, ed. Boudon-Millot (2007) 164.27–165.2, that his father 'inherited those subjects from his grandfather and his great-grandfather'. In other words, 'he knew them well'.

53 First quotation: Ibn Abī Uṣaybī'ah, *'Uyūn al-anbā'*, 5, ed. Müller (1882) 1.74.9–27 ≈ Galen, *Lib. Prop.*, 2, ed. Kühn (1830) XIX.17–19 = 3.1–8, ed. Boudon-Millot (2007) 141.17–143.7. As to the second quotation (Ibn Abī Uṣaybī'ah, *'Uyūn al-anbā'*, 5, ed. Müller [1882] 1.74.30–75.25), it runs continuously, but refers to three distinct parts of Galen, *Lib. Prop.*, 1, ed. Kühn (1830) XIX.13–16 = 1.6–2.1, ed. Boudon-Millot (2007) 137.24–140.14, that is: 137.24–138.15; 138.21–139.27; 140.12–14 (see n.60 below).

54 Abū Sa'īd 'Ubayd Allāh ibn Jabra'īl ibn 'Ubayd Allāh ibn Bukhtīshū' ibn Jabra'īl ibn Bukhtīshū' ibn Jūrjis ibn Jabra'īl (d. c. 450/1058). See Ibn Abī Uṣaybī'ah, *'Uyūn al-anbā'*, 8, ed. Müller (1882) I.148.5.

55 The son of Ḥunayn (d. c. 288/910). See Ibn Abī Uṣaybī'ah, *'Uyūn al-anbā'*, 8, ed. Müller (1882) I.200.

56 Zāhir al-Dīn Abū al-Ḥasan 'Alī ibn Abī al-Qāsim Zayd ibn Funduq al-Bayhaqī, (d. 565/1169–70). See Dunlop (2012).

57 *Mashārīb al-tajārib wa-ghawārib al-gharā'ib*. Ibn Abī Uṣaybī'ah reads *masārib*.

I say: I found that ‘Ubayd Allāh ibn Jabra’īl ibn ‘Ubayd Allāh ibn Bukhtīshū’ thoroughly examined that matter (*qadi istiqṣā al-naẓara fī hādhā al-ma’nā*). He was asked about the time of Galen whether he was a contemporary of Christ or whether he lived before or after him. Here follows a transcript (*naṣṣ*) of what he replied about this.⁵⁸

Martin Sprengling was the first scholar who suspected that this statement by Ibn Abī Uṣaybi’ah might introduce an epistle, *risālah*, written by ‘Ubayd Allāh ibn Jabra’īl ‘in answer to an inquiry concerning Galen’s dates’⁵⁹ – and rightfully so: as the words *qadi istiqṣā al-naẓara fī hādhā al-ma’nā, wa-dhālika anna-hu qad su’ila ‘an zamāni Jālīnūsa*, literally, ‘he went to the utmost point in examining that matter: he was asked about the time of Galen’, show, not only the request was very specific,⁶⁰ but also what follows cannot be anything but a full ‘transcript’ (*naṣṣ*)⁶¹ of ‘Ubayd Allāh ibn Jabra’īl’s response to it.⁶² Furthermore, as noted by Sprengling, the statement ‘said ‘Ubayd Allāh ibn Jabra’īl’, found in four places throughout this material,⁶³ and of course the final clause which marks the place where the epistle ends – ‘these are the last words of ‘Ubayd Allāh ibn Jabra’īl regarding the matter of Galen’⁶⁴ – are further evidence of ‘Ubayd Allāh ibn Jabra’īl’s authorship. Finally, returning to Galen’s *On My Own Books* as further evidence, if this be needed, ‘Ubayd Allāh ibn Jabra’īl’s statement: “Ubayd Allāh ibn Jabra’īl said: “From the date of this [event] it ensues that Galen must have been born”,⁶⁵ directly connected to the final words quoted from *On My Own Books* where Galen explicitly refers to ‘his return’ to Rome,⁶⁶ makes it evident that the quotations of this book come from ‘Ubayd Allāh ibn Jabra’īl’s epistle.⁶⁷

58 Ibn Abī Uṣaybi’ah, *‘Uyūn al-anbā’*, 5, ed. Müller (1882) 1.72.11–14.

59 See Sprengling (1917: 98).

60 This is why the second quotation of Galen, *Lib. Prop.* (see n.53 above) is interrupted in two places. Anything that is not relevant to the matter has been discarded in the response.

61 On the use of the word *naṣṣ* in this sense, see above, p. 288.

62 This context leaves no doubt that Ibn Abī Uṣaybi’ah quotes ‘Ubayd Allāh ibn Jabra’īl’s epistle in full. Levi Della Vida (1950: 185) claims that the whole passage might come from ‘Ubayd Allāh ibn Jabra’īl’s lost *Manāqib al-aṭibbā’* (*Achievements of the Physicians*), but there are no grounds whatsoever for such an assumption.

63 Ibn Abī Uṣaybi’ah, *‘Uyūn al-anbā’*, 5, ed. Müller (1882) 1.73.4; 1.75.25; 1.76.3; 1.77.5.

64 Ibn Abī Uṣaybi’ah, *‘Uyūn al-anbā’*, 5, ed. Müller (1882) 1.77.10–11.

65 Ibn Abī Uṣaybi’ah, *‘Uyūn al-anbā’*, 5, ed. Müller (1882) 1.75.25.

66 Ibn Abī Uṣaybi’ah, *‘Uyūn al-anbā’*, 5, ed. Müller (1882) 1.75.24–5: ‘On my return to Rome, I was thirty-seven years old’.

67 To that evidence may be added the fact that Ibn Abī Uṣaybi’ah leaves unmodified the name given by ‘Ubayd Allāh ibn Jabra’īl to Galen’s *Remarks* (*Jawāmi’*) on Plato’s books. See below, n.78.

As regards the faithfulness of these extracts to the sources, as the writer has not seen the Arabic manuscript in which Ḥunayn's translation of *On My Own Books* is preserved,⁶⁸ he is unable to proceed further with this line of inquiry.⁶⁹ Nonetheless, as in the case of *On My Own Books*,⁷⁰ the extracts all compare very well with the Greek original. Furthermore, in at least two instances, they even agree with the Greek manuscripts against the Arabic manuscript of Mešhed. The first instance concerns what happened after Lucius Verus' death. We know that he was deified after Marcus Aurelius had taken his body to Rome:⁷¹ hence *tēn apotheōsin Antōninos epoīēsato*, 'Antoninus had [him] deified', which is found by conjecture in Chartier's edition and seemingly confirmed by Ḥunayn's text, against *tēn apothēsin Antōninos epoīēsato*, 'Antoninus had [his body] interred', in the Greek manuscripts – and in agreement with 'Ubayd Allāh ibn Jabra'īl's quotation.⁷² As to the second instance, it is found in a passage where Galen mentions those who support different schools.⁷³ The Greek manuscripts read *Hippokrateious ē Praxagoreious ē holōs apo tinos andros*, '[those who support] Hippocrates or Praxagoras or someone else altogether',⁷⁴ in agreement with 'Ubayd Allāh ibn Jabra'īl's quotation,⁷⁵ while Ḥunayn's text adds *ē Erasistrateious*, 'those who support (Erasistratus)', after *Hippokrateious*.

The latter passage deserves further attention, as it conveys a singular and significant image of Galen. It involves two treatises, *On Anatomy According to Hippocrates* and *On Anatomy According to Erasistratus*, that Galen wrote

68 Mešhed, Riḍā, ṭibb 5223, first mentioned by Sezgin (1970: III.79). On the importance of this manuscript for the history of the Greek text, see Boudon (2002), with an English translation of a newly discovered section of *On My Own Books*. And in French, see Boudon (2001) and Boudon-Millot and Pietrobelli (2005). See also Boudon-Millot (2007: 50–8); however, Ḥunayn's Arabic readings are only provided in French.

69 One thing that Ḥunayn's text and 'Ubayd Allāh ibn Jabra'īl's quotations seem to have in common is that they both provide additional information on the number of volumes Galen's books comprised. This feature of Ḥunayn's translation is mentioned by Boudon-Millot (2007: 56–7), although none of the recorded references tallies with those of 'Ubayd Allāh ibn Jabra'īl's quotations. See Ibn Abī Uṣaybī'ah, *Uyūn al-anbā'*, 5, ed. Müller (1882) 1.74.32–75.1: 'For this man [Boethus], I also wrote five books *On the Anatomy According to Hippocrates*, and three books that I wrote thereafter *On the Anatomy According to Erasistratus*'.

70 See above, p. 288.

71 See Boudon-Millot (2007: 142, n.5).

72 See Boudon-Millot's critical apparatus (2007: 142.13): '*apotheōsin* Ch. Ar.: *apothēsin* A Vlat', and compare with Ibn Abī Uṣaybī'ah, *Uyūn al-anbā'*, 5, ed. Müller (1882) 1.74.18–19: 'Lucius died on the way, and Antoninus took his body to Rome where he had it interred'.

73 Galen, *Lib. Prop.*, 1, ed. Kühn (1830) XIX.13 = 1.9, ed. Boudon-Millot (2007) 138.13–5.

74 Both 'A' and 'Vlat', see the critical apparatus *ad loc.* n.73.

75 Ibn Abī Uṣaybī'ah, *Uyūn al-anbā'*, 5, ed. Müller (1882) 1.75.8.

within the context of a dispute with someone named Martialos, otherwise unknown. That man, who was quarrelsome and prone to envy, once heard that an answer by Galen to a question on anatomy at a public meeting had aroused the admiration of everyone in the audience. He then asked a friend of Galen's to which of all the medical sects he belonged. The passage reads as follows in Arabic:

He [Martialos] inquired about me of one of our friends into something that I said, as to any of all the medical sects I might belong to. He replied that I call (*innī usammī*) ['slave'] he who names himself in reference to any of the medical sects (*man yansibu nafsa-hu ilā firqatin mina al-firaqī*). Then he said: 'He is one of the supporters of Hippocrates or Praxagoras or someone else, while I choose the best from the lessons of everyone!'⁷⁶

The great difference between the Greek and the Arabic lies in a shift of characters, for in the Greek all that is replied to Martialos belongs to Galen's friend, and thus is to be attributed to Galen:

He [Martialos] asked one of my friends which of the sects I belonged to. Having heard that I call slaves those who name themselves in reference to Hippocrates (or Erasistratus) or Praxagoras or someone else altogether, and that I chose the best from everyone.⁷⁷

To sum up, in contrast with the Greek, the Arabic version transmitted in 'Ubayd Allāh ibn Jabra'il's *risālah* leaves no room for a portrait of Galen as an eclectic

76 Ibn Abī Uṣaybi'ah, *Uyūn al-anbā'*, 5, ed. Müller (1882) 1.75.6–9. In the writer's opinion, the text corresponding to the first reply is not fully satisfactory. The Greek reads: *hoti doulous onomazō tous heautous anagoreusantas Hippokrateious*, 'that I call slaves those who name themselves in reference to Hippocrates'. Obviously, the word corresponding to 'slaves' has fallen away from the Arabic. As a result of this corruption, one has to read *usammā*, 'I am called', instead of *usammī*, 'I call', which is exhibited by the manuscripts that the writer was able to see. Hence the text such as may be presumed: *innī usammā man laysat nafsu-hu ilā firqatin mina al-firaqī*, 'I am called "the one who does not belong to any of the sects"'. Besides, the preposition *ilā*, 'in reference to', here loosely governed by *man laysat nafsu-hu*, literally, 'he, whose person/soul is not', is reminiscent of the misreading of *man yansibu nafsa-hu ilā*, 'he, who names himself in reference to', in a script which is in close similarity (من يلبست > من ينسب) and also perfectly agrees with the Greek.

77 Galen, *Lib. Prop.*, 1, ed. Kühn (1830) XIX.13 = 1.8–9, ed. Boudon-Millot (2007) 138.11–15: *ēreto tina tōn emōn philōn, apo poias eiēn haireseōs. akousas d' hoti doulous onomazō tous heautous anagoreusantas Hippokrateious (ē Erasistrateious) ē Praxagoreious ē holōs apo tinos andros, eklegoimi de ta par' hekastoīs kala*.

physician. It must be added that this feature does not emerge by chance out of the vicissitudes of the textual transmission. On the contrary, it may even appear as the most consistently asserted feature throughout the chapter devoted to Galen. This is apparent from what Ibn Abī Uṣaybī'ah adds immediately after 'Ubayd Allāh ibn Jabra'īl's *risālah*, which closes with a laudatory statement of Galen about the Christians.⁷⁸ It is clear from the final words of this *risālah* that Galen's statement serves a purely chronological intent, for the asceticism and the aloofness from mankind that is emphasised in this statement, 'Ubayd Allāh ibn Jabra'īl concludes, describe monkery (*rahbanah*), which did not become apparent until a hundred years after the death of Christ. Whereupon, just after having closed 'Ubayd Allāh ibn Jabra'īl's *risālah*, Ibn Abī Uṣaybī'ah all of a sudden annihilates the laudatory point on the Christians by quoting several contradictory sayings of Galen from Muwaffaq al-Dīn ibn al-Maṭrān. The first reads as follows:

I have copied from the handwriting (*min khaṭṭi*) of the master (*shaykh*) Muwaffaq al-Dīn As'ad ibn Ilyās ibn al-Maṭrān the following: 'Passages where Galen mentioned Moses and Christ. He mentioned Moses in the fourth part of his book *On the Anatomy According to Hippocrates*, where he says: "And so they think that particularly those [mentioned] among the physicians look like Moses, who gave laws to the Jewish people for he was concerned about writing his books without providing any proof (*min ghayri burhānin*) when he said: God has ordered, God has said".⁷⁹

Before commenting on this quotation, it is of interest to note that it perfectly illustrates, as already said above, how such valuable extracts of lost books of Galen have come down to us through the connections between learned men and physicians at Ibn Abī Uṣaybī'ah's time. In this regard, the circumstances of their transmission must again be emphasised: Ibn Abī Uṣaybī'ah speaks of one of the many manuscripts in Ibn al-Maṭrān's own handwriting that he was able

78 This passage, which has been much commented on, is taken from Galen's *Remarks (Jawāmi')* on Plato's *'Republic'* (Ḥunayn, *Risālah*, ed. Bergsträsser (1925) 124). Ibn Abī Uṣaybī'ah leaves unmodified the title *Tafsīr; Commentary*, as provided in 'Ubayd Allāh ibn Jabra'īl's *risālah*, although the title transmitted by Ḥunayn is known to him. See Ibn Abī Uṣaybī'ah, *'Uyūn al-anbā'*, 5, ed. Müller (1882) 1.76.31–77.5 and 100.3–10. Of the third book of the *Jawāmi' kutub Aflāṭūn*, Remarks on the Timaeus have come down to us, along with other fragments of *Remarks on the Republic* and the *Laws*. See Ritter and Walzer (1934: 20, no. 32), and Kraus and Walzer (1951). On this passage, and on Galen's statements on the Christians, see Sprengling (1917), Walzer (1949), and Levi Della Vida (1950), although the latter must be taken with caution on some points. See n.62 above.

79 Ibn Abī Uṣaybī'ah, *'Uyūn al-anbā'*, 5, ed. Müller (1882) 1.77.11–15.

to see.⁸⁰ It is known from the context that this manuscript did not contain the entirety of Galen's *On the Anatomy According to Hippocrates*. On the contrary, it is clear from Ibn al-Maṭrān's introductory words – 'passages where Galen mentioned Moses and Christ'⁸¹ – that Ibn Abī Uṣaybi'ah is referring to a compilation of a Christian physician who may have been interested in gathering together from various sources the passages where Galen had mentioned the Christians.⁸²

Returning to the quotation itself, its relevance to the discussion on the authorities and the medical sects must be emphasised. As a matter of fact, the very same context in which *On the Anatomy According to Hippocrates* was written is found again in this book. Galen not only puts the blame on the gullibility of those who praise physicians who always rely on authorities just like Moses did with God, but he also marks the essential difference between gullibility and science, which is all about proof (*burhān*). So, by inserting this quotation, Ibn Abī Uṣaybi'ah, having closed the discussion on Galen's date of birth, brings back the debate on medical matters; he also spoils the point on the Christians so as to leave no doubt about Galen's reliance on any kind of medical sect.⁸³

Galen's independence of mind is asserted again in a quotation found at 1.82.8–11, where Ibn Abī Uṣaybi'ah ends his account of Ibn Juljul, before turning to al-Mubashshir ibn Fātik.⁸⁴ It is noteworthy that this account falls within a realm quite close to anatomy, namely surgery or healing the injuries of the body:

Galen says in the *Katagenos* (*Qātājānis*)⁸⁵ that he was in charge in the temple of Rome, taking over from the chief physician (*fī nawbati al-*

80 See the text on the previous page.

81 See the text on the preceding page.

82 Upon checking the facsimile of the Iranian edition of Ibn al-Maṭrān's *Bustān al-aṭibbā' wa-rawḍat al-alibbā'* (*The Orchard of the Physicians and Garden of the Wise*), ed. Muhaghghigh (1989), the writer did not find the above quotation. Ibn Abī Uṣaybi'ah says that he was told by a relative of Ibn al-Maṭrān's that at the time of his death, he had left a number of drafted books ready for publication (*miswadātun 'iddatun*, Ibn Abī Uṣaybi'ah, *Uyūn al-anbā'*, 15, ed. Müller [1884] 11.181.28) on medicine and other subjects.

83 On this passage, see Walzer (1949: 18 ff.). This passage can be read in connection with two other passages from Galen, *Diff. Puls.*, 2.4 and 3.3, ed. Kühn (1824) VIII.579.15 and VIII.657.1, where Galen warns against the dangers of following what cannot be proved. In the first passage, Galen says that one can teach those who follow Moses and Christ more easily than those who depend on the sects (see Walzer 1949: 37 ff.).

84 On the pattern followed by Ibn Abī Uṣaybi'ah see above, n.35, for the references.

85 This is the *Liber Catagenarum*, the first part of *On the Composition of Drugs According to Kind* (*fī tarkīb al-adwiyati* [Ḥunayn, *Risālah*, ed. Bergsträsser (1925) 79]). See Sezgin (1970:

shaykhi al-muqaddami) who [worked] in the temple where the wounded were cured – this temple was the hospital – and that all of the wounded that he took care of were cured before the others. From this, his virtue was apparent and prevailed upon him. As regarded scientific knowledge (*min 'ilmi al-ashyā'i*), he was not content with any authority (*bi-al-taqlīdi*) without resorting to experiment (*dūna al-mubāsharati*).⁸⁶

As regards the textual transmission, it is clear that this quotation does not carry the same level of accuracy as the ones examined in the lines above. Nonetheless, quotations as this one requires a particular scholarly approach for they too provide important insight into the reception of Galen in the Arabic tradition.

It is quite perspicable that the lines quoted above do not follow the letter of Galen.⁸⁷ It may not be superfluous to note here that what follows the verb 'to say' (*qāla*)⁸⁸ explains – and not refers to – what is said.⁸⁹ More important, this quotation still belongs in full to Ibn Juljul's *Ṭabaqāt al-aṭibbā' wa-al-ḥukamā'* (*On the Classes of Physicians and Wise Men*), which Ibn Abī Uṣaybī'ah stops using at this point. Besides, from the material that the writer has examined so far, it appears that Ibn Abī Uṣaybī'ah's method of quoting from other authors is as literal as possible. Conversely, if quoted authors furnish him with information that is not consistent with his own, the former has no effect on the latter, as will be illustrated from the following last two examples.

The first example immediately precedes the quotation just discussed and follows the first quotation of Galen, *Recognising the Best Physician*, 1.81.32, where the text of Ibn Juljul resumes.⁹⁰ To illustrate how Galen once exposed an impostor, Ibn Juljul quotes from Galen: 'Galen said in his book *On the Diseases*

III.64, 118–20 [64]), and Ibn Abī Uṣaybī'ah, *Uyūn al-anbā'*, 5, ed. Müller (1882) 1.98.14–19 on the division of the treatise into two books.

86 Ibn Abī Uṣaybī'ah, *Uyūn al-anbā'*, 5, ed. Müller (1882) 1.82.8–11. This is the text from Müller's edition to which *fi-hi* has been added from Ibn Juljul's *Ṭabaqāt*, ed. Fu'āt Sayyid, 43.16, that is: 'in the temple *where* the wounded were cured'. The variant readings related to this difficult passage in the mss. of Ibn Abī Uṣaybī'ah and Ibn Juljul are many.

87 Not surprisingly, the writer was unable to find the exact reference in the preserved Greek text.

88 See the quote on the preceding page.

89 The difference is marked in Arabic by the conjunction *anna*, instead of the expected *inna* after the verb *qāla*, 'to say' (see n.104 below).

90 See above, p. 286.

That Are Difficult to Cure.⁹¹ As Fuat Sezgin notes,⁹² this book is unknown. It is not mentioned by Ḥunayn, although it is found on the first page of a work by Qusṭā ibn Lūqā al-Baʿlabakkī (d. 300/912–13),⁹³ *On the Order in Which the Books of Galen Should Be Read*.⁹⁴ Like Sezgin, Max Meyerhof also notes that this book is unknown.⁹⁵ Nonetheless, he considers it authentic as can be seen from his own complementary list of books that, according to him, Ḥunayn himself – or the scribes – ‘may have missed’ in his book (*maqālah*) *fī dhikri al-kutubi allatī lam yadhkur-hā Jālīnūsu fī fihristi kutubi-hi* (*On What from His Books Galen Did Not Mention in His Index*).⁹⁶ It must be noted, however, that *On the Diseases That Are Difficult to Cure* is mentioned by Moritz Steinschneider with reservation, among other titles that he considers either ‘falsely attributed or doubtful’, for they do not appear in the lists established by Ibn Abī Uṣaybiʿah and are not quoted from other authors.⁹⁷ Steinschneider’s intuition is remarkable, for none of these scholars could possibly have known that this title, along with the extract that accompanies it, is only part of Ibn Juljul’s book. Ibn Abī Uṣaybiʿah remains as faithful as possible to it, but clearly does not consider *On the Diseases That Are Difficult to Cure* authentic, for he does not include it in his own complementary list.⁹⁸

The second example illustrates another aspect of Ibn Abī Uṣaybiʿah’s method of quoting other authors. It is about Galen’s *Avoiding Distress* and is found at

91 Ibn Abī Uṣaybiʿah, *ʿUyūn al-anbāʾ*, 5, ed. Müller (1882) 1.81.32 ≈ Ibn Juljul, *Ṭabaqāt*, ed. Fuʾāt Sayyid (1955) 43.5.

92 Sezgin (1970: III.131–2 [129]).

93 See Hill (2012) and Sezgin (1970: III.270–4).

94 This fragment has been translated into German by Meyerhof (1928: 545–8), *Aya Sofia* 3509 fol. 103. I have translated here the title from the German *Die Reihenfolge der Lektüre der Schriften des Galenos*. Sezgin (1970: III.273 [49]) further has ‘Epistle’ before the title, viz. *Risālah fī tartīb qirāʾat kutub Jālīnūs*, whereas Ibn Abī Uṣaybiʿah has significantly different data: ‘*The Book on the Order in Which the Medical Books Should Be Read*. He wrote this book for Abū al-Ghiṭrīf al-Biṭrīq’ (Ibn Abī Uṣaybiʿah, *ʿUyūn al-anbāʾ*, 10, ed. Müller [1882] 1.245.5–6).

95 Meyerhof (1928: 547 [g.29]).

96 On ms. *Aya Sofia* 3590 which contains this *Maqālah* of Ḥunayn, see Bergsträsser (1932: 84 ff.). The word ‘Index’, *fihrist*, here refers to *On My Own Books*. Meyerhof (1928: 534–7) lists twenty-six titles. Then, starting at no. 27, he provides five additional titles which are not found in Ḥunayn’s *Maqālah*, among them is the extract found in Ibn Abī Uṣaybiʿah: *On the Diseases That Are Difficult to Cure* (no. 30), which, Meyerhof says, ‘absolutely seems to be authentic’.

97 See Steinschneider (1891: 463 [111]).

98 On Ibn Abī Uṣaybiʿah’s lists, see below, p. 299.

1.84.31–85.8, exactly where Ibn Abī Uṣaybi'ah ends the account of al-Mubashshir ibn Fātik.⁹⁹ The passage reads as follows:

[Galen] explained in his book *On the Negation of Grief* that many of his books and furniture, of which he had a lot, burned in the great storehouses that belonged to the emperor in Rome. Some of the manuscripts that perished in the fire were by the hand of Aristotle, others by the hand of Anaxagoras and Andromachus. He had corrected their readings under those of his teachers who he could trust, and under people who could relate the tradition of the [readings] starting from Plato. He travelled to distant cities till he corrected most of them. He mentioned that among the bulk of his possessions that is gone in this fire were also many other things that he has already mentioned in his book and that would take too long to enumerate.

al-Mubashshir ibn Fātik said that among the whole of the possessions of Galen that were burned, were Rufus' book *On Theriacs and Poisons*, the *Treatment of Poisoned People* and the *Composition of Drugs According to the Disease and to the Time*. He [also] said that to him, [this book] was so rare an item among his possessions that he had it written¹⁰⁰ in white brocade [variegated] with black silk. He had paid a large sum of money for this.¹⁰¹

As noted, Ibn Abī Uṣaybi'ah brings an end to the account of al-Mubashshir at the conclusion of this passage. In fact, this account is extracted bodily by Ibn Abī Uṣaybi'ah from al-Mubashshir's *Mukhtār al-ḥikam wa-maḥāsīn al-kalim* (*Choicest Maxims and Best Sayings*).¹⁰² Furthermore, this whole passage, as it

99 See above nn.35 and 41.

100 *wa-anna min 'izzati-hi 'inda-hu kataba-hu*. Meyerhof (1929: 85) mistakenly read *kutuba-hu*, 'He also said that his most precious books' (Ferner, daß seine wertvollsten Bücher), instead of *kataba-hu*, 'He wrote it, he had it written'. Meyerhof's misreading then passed into Boudon-Millot and Jouanna (2010: lxxiii). One must keep in mind that al-Mubashshir speaks only about one, imaginary, book by Rufus, which is referred to in this sentence to complete Galen's portrait patterned after the ideal scholar during al-Mubashshir's time, always trying with utmost care to trace uninterruptedly the tradition of his books to the original authors as any great Muslim scholar would do.

101 Ibn Abī Uṣaybi'ah, *Uyūn al-anbā'*, 5, ed. Müller (1882) 1.84.31–85.8. It must be noted that this passage is distinct from and not to be confounded with the passage where Ibn Abī Uṣaybi'ah mentions Galen's *Avoiding Distress* in the list of all the books of Galen (Ibn Abī Uṣaybi'ah, *Uyūn al-anbā'*, 5, ed. Müller [1882] 1.100.30–2).

102 al-Mubashshir, *Mukhtār al-ḥikam*, ed. Badawī (1980) 291.12–292.5. The account in Boudon-Millot and Jouanna (2010: lxxi–lxxiii) must be corrected, as it is based on Meyerhof (1929:

is found in al-Mubashshir, is far from any kind of literal quotation of Galen. The title of *Avoiding Distress* is not even found in al-Mubashshir,¹⁰³ who may have drawn from Greek sources translated into Arabic to build up his own account. To sum up, instead of 'he explains in his book *On the Negation of Grief* that',¹⁰⁴ which is found in Ibn Abī Uṣaybi'ah, al-Mubashshir writes, 'he mentions that'.¹⁰⁵ Thus we are left with two possibilities: either the title has been added by Ibn Abī Uṣaybi'ah or – much more likely in the writer's opinion – it was already found in his exemplar as the result of the comments of previous scholars.¹⁰⁶ Be that as it may, Ibn Abī Uṣaybi'ah does not deserve to be criticised on the pretence of any particular detail of this passage not being found in the Greek text. In further evidence that al-Mubashshir's statement is built upon anecdotes, if this be needed, the passage 'many other things that he has mentioned in his book [*Avoiding Distress*] and that would take too long to enumerate'¹⁰⁷ clearly cannot refer to Galen speaking about his own book in the very same book. Obviously, these words are al-Mubashshir's.

The subsequently added title *On the Negation of Grief* (*fī nafy al-ghamm*) may interestingly be compared with the one provided by Ibn Abī Uṣaybi'ah in the section devoted to the list of Galen's books from Ḥunayn's *Risālah: On How to Turn Away Grief* (*fī ṣarf al-ighṭimām*).¹⁰⁸ While the verbal noun *nafy* conveys the general idea of negation, as in 'the absence of grief', *ṣarf* is used in a more active sense, as in 'the endeavour not to grieve'. As a matter of fact, the same distinction already existed in the titles transmitted by the Greek tradition,

85–6), who wrote at a time when al-Mubashshir's book was considered lost: see Meyerhof (1929: 86, § 2): 'he [Ibn Abī Uṣaybi'ah] refers to a known book ... to date likewise lost'.

103 The same remark applies at Ibn Abī Uṣaybi'ah, *ʿUyūn al-anbāʾ*, 5, ed. Müller (1882) 1.84.18 ≈ al-Mubashshir, *Mukhtār al-ḥikam*, ed. Badawī (1980), 290.11, where the text of al-Mubashshir resumes (see above, n.39). The title *Kitāb fī ʾllāj al-tashrīḥ* (*On Anatomical Procedures*) is found in Ibn Abī Uṣaybi'ah, but not in al-Mubashshir.

104 *wa-qāla fī kitābi-hi fī nafy al-ghammī anna-hu*. See the text above on the preceding page and n.89 above.

105 al-Mubashshir, *Mukhtār al-ḥikam*, ed. Badawī (1980) 291.12.

106 The above quoted extract of Galen, *Ord. Lib. Prop.* already provided an illustration of such processes. See on pages 288–9.

107 See the above quoted text on the preceding page.

108 Ḥunayn, *Risālah*, ed. Bergsträsser (1925), 120 ≈ Ibn Abī Uṣaybi'ah, *ʿUyūn al-anbāʾ*, 5, ed. Müller (1882) 1.100.30. Ms. Ayasofya 3593 (= C), which has been recently edited by Käs (2010–11), cites yet another title for this treatise: *fī ṣarf al-ghamm*, *On How to Put Away Grief* (Käs, 2010–11: 151). Boudon-Millot and Jouanna (2010: lxxi n.68) mistakenly assume that the title *On the Negation of Grief* (*fī nafy al-ghamm*) may come from Ibn Abī Uṣaybi'ah. See n.102, above.

between *alypia* and *alypēsia*.¹⁰⁹ So this coincidence offers a further opportunity to emphasise the conservativeness of the Arabic tradition. Surely, one may take the title that is found in Ḥunayn's *Risālah* and in Ibn Abī Uṣaybi'ah's list as a confirmation of the Greek *lectio difficilior* against another more readily understandable reading.

At this point of his text, Ibn Abī Uṣaybi'ah, defeated by the abundance of sources available to him, announces a book in which he plans to gather all the anecdotes, witticisms, and examples scattered in Galen's books and in accounts about him: 'For now, I have not been able to mention all of these here. This is why I intend to make a separate book which will include all that I can find mentioned on these subjects in all of his and others' books, God willing'.¹¹⁰ Ibn Abī Uṣaybi'ah failed to fulfill this ambition. Instead, one could assume, he might have decided to apply the same standard to all of the chapters of *ʿUyūn al-anbāʾ* to come. As it is, however, this statement is worth mentioning because it provides valuable insight into the extent of the Galenic sources yet to be scrutinised by him.

The extensive lists of all the books attributed to Galen at the time of Ibn Abī Uṣaybi'ah, either authentic or apocryphal, are found in the last part of the chapter devoted to Galen. They follow several pages filled with examples of Galen's best sayings and maxims.¹¹¹

Of course, the titles mentioned by Ibn Abī Uṣaybi'ah in each list cannot possibly be examined here. The question of the Galenic sources that were available to Ibn Abī Uṣaybi'ah will be approached in an expanded version of this chapter. On this matter, the reader may refer to the seminal work of Max Meyerhof.¹¹² Surely, one of the major interests of *ʿUyūn al-anbāʾ*, is that Ibn Abī Uṣaybi'ah, starting from the list of Galen's works that Ḥunayn (d. 260/873) first established in his *Risālah* four hundred years earlier, rounds off all the lists established by his predecessors, including the one in Ibn al-Nadīm's *Fihrist* (d. 377/987–8). These lists are truly exceptional, because Ibn Abī Uṣaybi'ah, relying both on multiple sources, now lost, and on his personal

109 See the discussion in Boudon-Millot and Jouanna (2010: 27–9). *Alypia*, 'the absence of grief', is transmitted in Galen, *Lib. Prop.*, 13, ed. Kühn (1830) XIX.45.13 = 15.1, ed. Boudon-Millot (2007) 169.17, *peri alypias hen*, 'On the Negation of Grief, one book', while the restored *alypēsia* as part of the title of *Avoiding Distress* is deemed to be the *lectio difficilior*.

110 Ibn Abī Uṣaybi'ah, *ʿUyūn al-anbāʾ*, 5, ed. Müller (1882) I.85.11–12.

111 Ibn Abī Uṣaybi'ah, *ʿUyūn al-anbāʾ*, 5, ed. Müller (1882) I.88.6–90.21. This section begins as follows: 'Among the sayings of Galen, his wise maxims and aphorisms'; see Müller (1877). On classical Arabic wisdom literature, see Gutas (1981). As already noted (n.30, above), this section about Galen's *Sayings* may have preserved a short fragment of Galen's *Commentary on Hippocrates' Oath*.

112 Meyerhof (1928).

investigations,¹¹³ offers an accurate insight into what may have contained a complete library of Galenic and pseudo-Galenic books translated into Arabic in the middle of the thirteenth century in Damascus and Cairo.

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113 That Ibn Abī Uṣaybi‘ah had access to sources that were quite distinct from Ḥunayn’s is clearly illustrated by the synopsis presented by Bergsträsser (1932: 52), where Ibn Abī Uṣaybi‘ah’s ‘other sources (Arabic mss. of Galen’s works, texts transmitted in scholarly books, etc.)’ are set apart from the sources mentioned in Ḥunayn’s *Risālah*.

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The Reception of Galenic Pharmacology in the Arabic Tradition

Leigh Chipman

It is almost a truism that the area of medicine in which the Arabs particularly excelled was pharmacology, to the extent that one of the chapters of *Galen: Problems and Prospects*¹ is entitled 'Galen in Arabic: The transformation of Galenic pharmacology'. There, Penelope Johnstone states unequivocally that 'it was in pharmacology that the Arab contribution is seen at its best; for the development of new techniques and substances did not call into question any accepted theories and principles, and the system was capable of almost unlimited expansion'.²

The theories and principles referred to are those of Galenic humoralism, which were absorbed and organised by authors writing in Arabic, creating a highly flexible system covering all fields of medicine. This system was not only able to explain biological phenomena relatively accurately and in accordance with observations, it was also able to adjust to the appearance of new material – diseases, *materia medica*, therapies, etc. – easily fitting it into the existing templates.³

This chapter will begin with the translation of Galen's pharmacological writings to Arabic, then turn to a discussion of the reception of his theory and practice in this field. In the case of theory, the main issues are how to fit drugs – both simples and compounds – into the humoral framework. As we will see, this was done quite successfully for simples, but not so well in the case of compound medicines. As for practice, Galen's name appears as part of the title of a number of recipes in the pharmacopoeias, but it is hard to gauge, from texts alone, to what extent pharmacists paid more than lip service to his name and whether even Galen's theories were put into practice.

¹ Nutton (1981).

² Johnstone (1981: 197).

³ Paavilainen (2009: 29).

1 Translation

Galen's major pharmacological writings were translated into Arabic by Ḥubaysh b. al-Ḥasan (fl. late ninth century), the nephew of Ḥunayn b. Ishāq (d. 873). His work *On the Capacities of Simple Drugs* was translated as *Kitāb al-Adwiya al-mufrada* (alternative titles: *Kitāb al-Adwiya al-basīṭa* and *Kitāb al-Basā'it*; *On Simple Drugs*).⁴ It became the basis for pharmacognosy in Arabic, and is extensively quoted by all authors on this subject, from 'Alī b. Rabbān al-Ṭabarī (fl. ninth century, Baghdad) through al-Ghāfiqī (d. c. 1165, Spain)⁵ to Ibn al-Bayṭār (d. 1248, Spain and the Levant).⁶ Ibn Rushd (d. 1198, Spain) even included a chapter on the drugs not mentioned by Galen in his medical encyclopaedia, *al-Kulliyāt fī al-ṭibb* (*Generalities of Medicine*; Lat.: *Colliget*).⁷ Galen's two treatises on compound drugs were also translated into Arabic: *On the Composition of Drugs According to Places*, in which the recipes are arranged from head to toe, as *Kitāb fī Tarkīb al-adwiya bi-ḥasab al-mawāḍi'* or *Kitāb al-Mayāmir* (from the Syriac *memrā*); and *On the Composition of Drugs According to Kind*, in which the recipes are arranged according to the various dosage forms, as *Kitāb fī Tarkīb al-adwiya 'alā al-jumal wal-aqnās* or *Kitāb Qāṭājānas* (a transliteration from the original Greek).⁸ These two methods of organisation were used throughout Arabic pharmacopoeias, with those that appeared as sections of medical encyclopaedias tending to use the first system and dispensaries (*aqrābādhīnāt*) preferring the second.⁹

Other books on pharmacological subjects translated into Arabic are *Kitāb fī Quwā al-adwiya al-mushila* (*On the Capacity of Cleansing Drugs*), translated by 'Īsā b. Yaḥyā;¹⁰ *Kitāb al-Adwiya al-muqābila lil-adwā'* (*On Antidotes*), also translated by 'Īsā b. Yaḥyā;¹¹ and the treatises on theriac, *Kitāb al-Tiryāq ilā Bīsūn* or *Kitāb al-Tiryāq ilā Fīṣūn* (*On Theriac to Piso*), translated by Yaḥyā b. al-Biṭrīq,¹² and *Kitāb al-Tiryāq ilā Bamfūliyānus* (*On Theriac to Pamphilianus*), translated by 'Īsā b. Yaḥyā.¹³

4 See Ullmann (1970: 47, 263); Sezgin (1970: 109).

5 Chipman (2014: 72–83).

6 Johnstone (1981: 203).

7 Amar et al. (2009: 83–101).

8 See Ullmann (1970: 48); Sezgin (1970: 118).

9 Of course, Ibn Sīnā's *Qānūn fī al-ṭibb* (*Canon of Medicine*) has both styles: book 2 – medicines arranged from head to toe, and book 5 – by type.

10 See Sezgin (1970: 105).

11 See Ullmann (1970: 49); Sezgin (1970: 121).

12 Sezgin (1970: 121); Richter-Bernberg (1969); Mouleriac-Gagnière (1987: 17–26).

13 See Ullmann (1970: 49); Sezgin (1970: 121). *On Theriac to Pamphilianus* is unlikely to be genuine; see Nutton (1997: 133–51).

A number of works surviving only in Arabic and dealing with medicaments on specific topics were attributed to Galen by Arabic tradition, which, like many other pre-modern societies, had a tendency to ascribe works to the foremost authorities in a given field (in this case, often incorrectly), and thus enhance the prestige of a work that might otherwise be lost in a sea of competing texts. These texts are: *Kitāb al-Adwiya allātī yashulu wujūduhā* (*On Procurable Remedies*);¹⁴ *Kitāb Abdāl al-adwiya* (*On Substitute Drugs*);¹⁵ *Kitāb al-Adwiya al-mujarraba* (*On Tested Remedies*; not in Kühn)¹⁶ and a possibly similarly themed *Kitāb al-Adwiya al-maḍmūna allātī tusammā bi-al-tajriba al-ṭibbiyya* (*Remedies*; not in Kühn);¹⁷ *Kitāb al-Adwiya al-maktūma* (*On Hidden Drugs*; not in Kühn);¹⁸ and *Kitāb Asrār al-nisā'* (*On the Secrets of Women*; not in Kühn).¹⁹

2 Theory – The Faculties

One of the clearest cases of the reception of Galen's pharmacology is the usage of the concepts of faculties or capacities and degrees, when describing drugs. Galen differentiated between the basic or primary qualities, which are the same as those in Hippocratic medicine and Aristotelian physiology: hot and cold, dry and moist, and the combinations thereof. These inhere to the substance itself. The secondary or derivative qualities are the effects of a substance on a body, not only the immediate heating, cooling, drying, and moistening, but also emollifying, purging, burning, etc. Tertiary qualities are those that affect parts of the body, such as sealing a wound.²⁰ A doctor seeking to treat a patient should take all this into account when attempting to return a sick person to his or her state of balance. This led to books of *materia medica* in Arabic including information on the degrees of intensity (*darajāt*) of the primary qualities (*quwā*) of the substance under discussion. For example, the pear (*ijjāš*) is declared by Abū Bakr al-Rāzī (d. 925, Baghdad) to be cold and moist in the second degree,²¹ meaning that it is not just edible/nutritious (as a substance hot/cold and dry/moist in the first degree would be) but also has some medicinal

14 See Ullmann (1970: 49); Sezgin (1970: 120).

15 See Ullmann (1970: 50); Sezgin (1970: 129).

16 See Ullmann (1970: 60).

17 See Sezgin (1970: 129).

18 Bos and Langemann (2006).

19 Levey and Souryal (1968: 208–19).

20 See Vogt (2008: 308).

21 Al-Rāzī, *Kitāb al-Ḥāwī fi al-ṭibb* (*The Comprehensive Book of Medicine*) (1964) xx.98.

efficacy (although less than that of a substance of the third degree; the pear is a 'nutritive medicament' rather than a medicament proper – see below).

Two generations later, a similar understanding appears in *Kitāb al-Ṣaydana fī al-ṭibb* (*Book of Pharmacy in Medicine*) by al-Bīrūnī (d. c. 1048, Central Asia), one of the major works on pharmacognosy in Arabic. Al-Bīrūnī quotes Galen and Dioscorides extensively, and provides the names in Arabic, Persian, Latin, Greek, and 'Indian' of the over one thousand substances he describes. In his introduction he mentions the four degrees ('orders', in Said's translation):

All those things that are eaten knowingly or in ignorance would either be foods or poisons. Between these two there are drugs. There are four orders of medicines. Medicines of the first order affect the active and passive faculties of the body. A moderate body would digest and completely metabolise them, and, after safeguarding itself, would absorb them completely. Likewise, the body first affects the medicines and later on after regaining normalcy is affected by them in turn. Poisons belong to the fourth order or category. According to [the] category to which they belong they either sicken the body or kill it. They therefore affect the body and are affected as well ... Medicaments fall into the second category, as, compared to the edibles, they are curative in action and, in contrast to the poisons, they are corrective. Therefore, between the edibles and the medicaments there is a second order which is known as nutritive medicaments. The third category is that of the poisonous drugs which lies between the nutritive medicaments and pure poisons.²²

However, the use of simples – drugs containing a single substance – was limited, and the majority of medicines were compounds of a number of drugs. How could the idea of qualities and degrees be realised when more than one substance was involved?

Even Galen himself had trouble applying his idea of degrees to remedies consisting of more than a single substance.²³ The response of Arab authors to the problem of transition from simple to compound drugs appears in introductions to books on pharmacy, which explain why compound drugs are necessary and how to work with them. Already Sābūr b. Sahl (d. 869, Baghdad), in the prolegomena to his *Aqrābādihīn al-ṣaghīr* (*Small Dispensatory*), declares:

22 Al-Bīrūnī, *Kitāb al-Ṣaydana fī al-ṭibb* (*Book on pharmacy and materia medica*), 1, tr. Said (1973) 5.

23 Vogt (2008: 315).

He who wants to compound drugs properly should know about the faculties of each one of them without confining himself in this matter to an understanding on the level of generalities, like those people do who declare in their books that this substance heats, this one cools, this one dries, and this one moistens; rather, he should gain a precise and specific knowledge of these issues, and be able to tell which degree each single substance occupies relative to its faculties and functions. Besides there are drugs which perform one or another of these functions in a truly hidden manner, others operate openly, some produce a strong effect, some act to perfection. And since the effects of drugs vary according to their degrees, one must not be content with knowing that such a one heats and such a one cools but rather add to this a knowledge of the extent to which that happens – thus, you will also learn whether heating or cooling are natural to the drug.²⁴

Oliver Kahl points out that ‘Sabur proceeds to observe that each degree (*daraġa*) can be subdivided into three stations (*manāzil*); and later on, he implicitly transfers the Galenic degree system from simple drugs to compound drugs, explaining that quantitative ratios (*maqādir*) may be conceived as scales (*a’dād*, lit. ‘numbers’) and that the proportion (*qiyās*) between therapeutic intervention and pathologic condition is measurable’.²⁵

Sābūr devotes the fourth chapter of his prolegomena to seven practical rules for how to choose the quantities of each simple that goes into a compound drug; however, in his dispensatory itself he does not indicate what faculties and degrees might result from the recipe he brings. This brings us to the important theoretical question of how exactly should the faculties and degrees of a compound drug be calculated? (As we shall see, this theory was largely ignored in practice.)

This question was studied most famously by Abū Yūsuf al-Kindī (d. 873, Baghdad). Better known as a philosopher and mathematician, and one of the forces behind the Greek-to-Arabic translation movement, al-Kindī also wrote on medicine. He composed a very practical medical formulary and a theoretical treatise *Fī Ma’rifat quwā al-adwiya al-murakkaba* (*On the Knowledge of the Capacities of Compound Drugs*), where he explains the problematics of the classification of drugs into degrees:

24 Sābūr b. Sahl, *Aqrābādihīn al-ṣaġhīr* (*Small Dispensatory*), 1, ed. and tr. Kahl (2012) 149–50 and 155–6.

25 Kahl (2012: 156, n.63).

I saw that the ancients had been content [only] to discuss each individual drug quality, such as warm and cold, moist and dry, that they perceived four limits (*ḥudūd*) which they called first, second, third, and fourth degree of each of the qualities. Yet they omitted to discuss this issue in compound drugs, and did not talk about a compound drug in such-and-such a degree of warmth and coldness, moisture and dryness. Yet it would have been more appropriate and deserving to know this [degree] in compound drugs.²⁶

Again, al-Kindī did not himself apply this system in his own formulary, nor is he known to have actually worked as a physician; his livelihood came from patronage as a translator, philosopher, and calligrapher. It appears that al-Kindī's computus was not used by the practising pharmacists and physicians of the Arabophone world: following Galen himself, they preferred to rely on tradition and experience when prescribing drugs, since the reaction of the human body to drugs – simple or compound – is unpredictable. This is true even in our own day of standardised ingredients and dosages; how much more so in the past, when it was clear to the practitioners that their ingredients might be stronger or weaker due to a wide variety of factors, such as where the plant grew, when it was picked, what part of it was being used, and more.²⁷

The only serious reaction to al-Kindī's computus appears some three centuries later, and at the other end of the Islamic world, in Ibn Rushd's (d. 1198, Spain) *Kulliyāt fī al-ṭibb* in the last chapter of his book 5, on drugs and foods. Analysing Ibn Rushd's writing, Tzvi Langermann sees this as a rejection of the Eastern Islamic tradition, or rather an attempt to provide an Andalusī alternative to it, similar to Ibn Ṭufayl's (d. 1185, Marrakesh) reaction to Ibn Sīnā (d. 1037, Iran), and points out that:

For all practical purposes, recipes for compound drugs were passed on by tradition ... Traditional recipes were passed on from generation to generation; even when practitioners experimented with old or entirely new formulae, their work was not guided by mathematical rules, such as those worked out in the treatise of al-Kindī. Pharmacological theory was of little practical use, both before and after Ibn Rushd. This accounts both for the weak interest in al-Kindī's treatise in the period preceding Ibn Rushd,

26 Al-Kindī, *Fī Ma'rīfat quwā al-adwiya al-murakkaba* (*On the Knowledge of the Capacities of Compound Drugs*), ed. Gauthier as cited in and translated by Pormann (2011: 506).

27 For an example of practitioners' awareness of this, see al-Kūhīn al-'Aṭṭār, *Minhāj al-dukan* (*The Management of the Pharmacy*), ed. al-'Āṣī (1992) 273–80.

as well as the relatively low level of interest in the controversy, once Ibn Rushd published his critique.²⁸

In her summing up, Sabine Vogt is thinking of the European tradition, but her words are true of the Arabic tradition as well: in both cases, later physicians attempted to refine and systemise Galen's theory of basic and derivative qualities with different degrees of intensity, while at the same time transmitting remedies associated with him, paying no attention to their theoretical basis (if any) and 'relying entirely on the high esteem of the name of Galen'.²⁹ This brings us to the question of what remedies associated with Galen can be found in the pharmacopoeias, and whether they do in fact reflect a 'high esteem' for him.

3 Practice – Galen's Recipes in Pharmacopoeias

To what extent was Galen's name truly esteemed, then? Pharmacological practice is hard to pin down, as the texts repeat the same recipes over time, and actual prescriptions are few and far between.³⁰ For the purposes of this chapter, we must rely on the texts and ask: To what extent does Galen's practice appear in later pharmacological works? In a previous article,³¹ I showed that to the extent that Galen's recipes for compound drugs are quoted, they appear in pharmacopoeias intended for physicians (e.g. Book 5 of Ibn Sīnā's *Canon of Medicine*) in greater number than in those intended for use by pharmacists. I suggested there that like Galen himself, who seems to have preferred more current recipes to the prescriptions appearing in the Hippocratic corpus, the authors of dispensatories seem to have preferred to peruse later writers and select recipes from them rather than from Galen.³² Again, any reference in the dispensatories to the humours – as does occur in some recipes, in lists of indications – *ipso facto* goes back to Galen. It should also be taken into account, that after looking at a wide variety of medical texts, Emilie Savage-Smith has shown that 'the therapeutic regime was dominated by balancing hot and cold, and dry and moist, through medicaments, food and the immediate environment', rather than retaining or evacuating humours in order to reach balance.³³

28 Langermann (2006: 365).

29 Vogt (2008: 317–18).

30 See Lev and Chipman (2012: 15–20).

31 Chipman (2012: 285–301).

32 Chipman (2012: 300).

33 Savage-Smith (2013: 100).

In parallel to the pharmacopoeias, a limited glimpse of actual practice can be provided by the prescriptions of the Cairo Genizah – admittedly deriving from a minority community, but one that was thoroughly integrated in terms of medical theory and practice. Analysis of the prescriptions held at Cambridge University Library, the main repository of documentary material from the Genizah, shows that prescriptions were written only for a limited number of drug categories, mainly syrups and lohochs. In general, all the prescriptions in the Genizah are considerably short, focused, and make use of known and common drugs; the fact that very few prescriptions are similar and none are identical to recipes in contemporary medical books and pharmacopoeias, attests both to their originality and practical characteristics, and to the way the Jewish physicians – who may be assumed to be representative of the profession – thought and worked. While medical books, and especially pharmacopoeias, served as the basis of knowledge, the recipes that they described were largely of a generic character. The actual healing process required a long meeting with the physician so that he might become acquainted not only with the patient's current symptoms but also with their unique temperament, and thus make a decision regarding correct treatment. Hence, in most cases the prescription was uniquely suited to the patient and his or her symptoms, the stage of the disease, his or her normal conditions of health, the weather, the season, and the availability of medicinal substances in the markets or on the shelves of the local pharmacies.³⁴

Peter Pormann perhaps sums this up best.³⁵ According to him, while pharmacology in Arabic developed on the basis of previous traditions, most importantly that of the Greeks, it did not remain stagnant. Indeed, the general theory of humoral pathology remained unchanged. The primary qualities of hot and cold, and dry and moist, remained dominant throughout the medieval period, and beyond. Many of the drugs that pharmacists and physicians used were already known to Dioscorides and Galen. At the same time we find considerable innovation, starting with the Greek to Arabic translation movement itself. Almost immediately, al-Kindī proposed a new theory of composing drugs and al-Rāzī challenged Galen's pharmacological methodology. 'The greatest achievement of this medical tradition, however, is probably the fact that it incorporated Indian and Persian *materia medica* into a Galenic framework. In doing so, the range of therapies available to patients was massively increased'.³⁶

34 Lev and Chipman (2012: 143–4).

35 Pormann (2011).

36 Pormann (2011: 514).

The integration of new *materia medica* into a Galenic framework continued well beyond the formative period of the eighth–tenth centuries. The ending of the Abbasid caliphate with the conquest of Baghdad by the Mongols in 1258 is no longer viewed as the point from which the Muslim world entered a period of inexorable decline. Rather, Thomas Allsen and, more recently, Michal Biran have shown that the thirteenth century was a period of great intellectual ferment and of extensive cultural exchange between China and Iran, and their hinterlands.³⁷ This exchange did not take place at the level of court culture alone, but also involved the transplanting of technologies and agricultural practices from East to West Asia and vice versa, brought by officials, troops, and even peasant communities from one end to another of the Mongol Empire.³⁸ In the field of medicine, it seems that the physicians were reluctant to abandon the theories they knew, but were happy to accept new therapeutic techniques, and particularly new drugs.³⁹ The Nestorian and Muslim physicians of Iran and elsewhere in the Islamic world remained faithful to Galenic humoralism, while Chinese doctors continued to analyse ill-health in terms of *yin-yang* and the Five Phases or Agencies. It is true that this analysis changed and developed in the course of the Yuan period, with superficial similarities to the Galenic degrees in drugs, but the basis of the various classifications remained the Chinese tradition.⁴⁰ The pharmacists, however, unconcerned with theory, adopted and rediscovered exotic *materia medica* that was useful. Indeed, from the time of Chinggis Qan the Mongols had taken an interest in the pharmacology of the cultures that they conquered. While Chinese rhubarb, cubebs, and white pepper were already an integral part of Persian pharmacology by the tenth and eleventh centuries, it was during the era of Mongol domination that their reputation was consolidated, particularly that of rhubarb, which became the cathartic of choice throughout the Middle East and Europe to the beginning of the twentieth century.⁴¹

In parallel to the absorption of *materia medica* from the East into a Galenic framework, Galenic medicine itself was undergoing a process of naturalisation within the Islamic sciences, in the form of the genre known as ‘the Medicine of the Prophet’ (*ṭibb al-nabī*). While in earlier research (and indeed in the views of Ibn Khaldūn, d. 1406, Cairo), *ṭibb al-nabī* was regarded as Bedouin superstition made respectable with a veneer of traditions going back to the Prophet

37 Allsen (2001); Biran (2015: 534–58).

38 Allsen (2001: 140).

39 Allsen (2001: 158).

40 See Unschuld (1977).

41 For an excellent study of this drug, see Foust (1992: 3–17).

Muḥammad, Irmeli Perho showed already some twenty years ago that in fact, this literature, which was created by traditionalist scholars in the third century, when collections of *ḥadīth* (sayings attributed to the Prophet Muḥammad) included chapters on medicine, and was perfected in the Mamlūk period (thirteenth-fifteenth century), in the form of separate treatises devoted to the subject.⁴² These works accepted Galenic medicine from the beginning. Their view of medicine was coloured by *fiqh*, Islamic jurisprudence, and their intention was to show that Muḥammad was as reliable an authority as Galen.⁴³ According to Ibn Qayyim al-Jawziyya (d. 1350, Damascus), author of one of the most prominent and popular books on the Prophet's medicine:

A perfect doctor should be experienced in recognising and treating not only physical illnesses but also those of the soul and spirit. A doctor who was competent only in dealing with diseases of the body was imperfect in his profession. A competent doctor should know how to use natural drugs, divine medicaments and he should be able to make use of imagination in his treatments ... In their search for cures, physicians should not ignore or despise the medical knowledge of the Prophet.⁴⁴

This attitude caused some scholars to maintain, according to Perho, that 'to consult a non-Muslim physician – or a Muslim physician who was ignorant of the Prophet's medicine – was to consult a second-rate physician'.⁴⁵ Despite this, it is clear that the authors of *ṭibb al-nabī* books assumed that the trained physician was the appropriate person for diagnosing and treating diseases,⁴⁶ indicating an acceptance of Galenic medicine even without an Islamic overlay, to the extent that Ibn Qayyim himself quotes Galen and Abū Bakr al-Rāzī.⁴⁷

4 Conclusion

To sum up, the reception of Galenic pharmacology in Arabic seems to have been a process of thoroughgoing adoption and naturalisation, at least at the level of simple drugs. Not only in the formative period of the eighth–tenth centuries,

⁴² Perho (1995: 49, 63).

⁴³ Perho (1995: 48).

⁴⁴ This is Perho's (1995: 116) summary of Ibn Qayyim.

⁴⁵ Perho (1995: 118).

⁴⁶ Perho (1995: 80–1).

⁴⁷ Ibn Qayyim al-Jawziyya, *al-Ṭibb al-nabawī (Healing with the Medicine of the Prophet)*, tr. 'Abd al-Qādir b. 'Abd al-'Azīz (2003) 36.

but also after the Mongol invasions of the thirteenth and fourteenth centuries, *materia medica* unknown and undreamed of by Galen was absorbed into the framework of the hot/cold/dry/moist humoral theory. Without Galen's name being mentioned, his ideas appear fully Islamicised in the *ṭibb al-nabī* literature. At the same time, despite attempts to streamline and codify the methods of combining simples into compound medicaments, such as those of al-Kindī and Ibn Rushd, this was ignored by the majority of physicians and pharmacists. What they did do, however, was apply humoral theory to the recipes for compound medicines in the pharmacopeias when prescribing for individual patients. Based on the evidence of the few extant prescriptions from the Cairo Genizah, physicians did not merely copy recipes verbatim and send them to pharmacists to be made up. Rather, each recipe was adapted to the patient's complexion, taking into account his or her individual requirements according to the principles of humoral pathology. There can be no better proof of the reception of Galen in Arabic pharmacology.

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PART 3

Galen in the Medieval West



Gloriosissimus Galienus: Galen and Galenic Writings in the Eleventh- and Twelfth-Century Latin West

Monica H. Green

To understand the place of Galen in twelfth-century medicine in the Latin West, we have to look to the eleventh and thirteenth centuries.¹ It was these two framing centuries that witnessed the tangible transformations we usually associate with the so-called twelfth-century Renaissance. The eleventh century saw a true revival of learned medicine: old texts were dusted off and re-edited, new texts were translated from both Greek and Arabic, and a new teaching curriculum was created from scratch. All these events happened in or around the Benedictine Abbey of Monte Cassino.² And in all of them, Galen's direct role, in terms of the impact of his authentic writings, was minimal. Now jump to the mid-thirteenth century: within the space of two or at most three decades, a veritable treasure trove of Galenic texts was found, copied anew, and grouped into thematic clusters that would define learned medicine until the end of the Middle Ages. In the latter half of the thirteenth century, a still growing corpus of authentic Galenic writings proliferated in university contexts in both France and Italy, spreading from there to learned centres throughout western Europe.³

If, however, we looked only at evidence for the twelfth century, we would see little overt indication that Latinate Europe was on a progression from a point A of a virtually Galen-less landscape to a point B of utter dominance. No authentic Galenic text aside from the *Tegni* (*Ars parva*) was among the 'bestsellers' of the twelfth century.⁴ None of his works on anatomy, or therapeutics, or pharmacy. None of the so-called 'Alexandrian canon' with, again, the exception of the *Tegni*. None of his works *On Beginners*. Yet many of these works were in fact translated into Latin in this period; their failure to attract immediate attention belies the long-held assumption that retrieval of the ancient Greek authorities

1 All translations are mine, unless otherwise stated.

2 Green (2018b).

3 See McVaugh (Chapter 20) in this volume.

4 See Table 1, 'Medical "Best Sellers" of the Long Twelfth Century', in Green (2018b).

was the driving motive for the 'twelfth-century renaissance' in scientific and medical translations.⁵

Why did this newly latinised Galenic corpus have so little immediate effect? Yes, a work sometimes misattributed to Galen, the mid-eleventh century *Passionarius* of the Salernitan physician Gariopontus, was extremely popular; at least fifty-two copies from the period are extant. And yes, it incorporated some parts of Galen's authentic work (as well as some pseudepigrapha). But there was little in Gariopontus' text that idolised Galen, or attributed much authority to him at all.⁶ In between the eleventh and the thirteenth centuries, I argue, there was a quieter transformation, one that has hitherto been barely perceived but which must be recognised if we are to understand why the landscape of 'Galenic medicine' changed so radically in western Europe in a period of barely 200 years. Latin medicine became Galenic not because of the immediate success of Galen's own writings. As we shall see, the four earliest Galenic translations from the Arabic, made in the late eleventh century, nearly vanished, and the larger campaigns of translation from the Arabic and the Greek at Toledo and Pisa, respectively, in the latter half of the twelfth century had no immediate impact. Rather, Galen's stature rose over the course of the twelfth century because he had been subtly but persistently championed as the ideal physician and medical authority by Constantine the African, Galen's earliest translator from the Arabic.

The present chapter draws on a comprehensive survey of all extant manuscripts, and catalogue and inventory witnesses of Latin medical writing in the long twelfth century, from c. 1075 to c. 1225. The value of this database lies in its ability to capture *all* trends in Latin medical culture in the period, with no bias for geographical region, institutional setting, or intellectual tradition. The database has thus far identified about 570 extant manuscripts, and about 150 catalogue and inventory witnesses.⁷ Although reconstructing the full extent of the long twelfth century material record of medicine is not possible, the database now provides excellent evidence for larger patterns of textual circulation in this period.

The dozen and a half books that were most popular in the twelfth century reflect a hodgepodge of origins: some came out of Late Antiquity, often from translations of 1000-year-old Greek works; some were translations of Greek writers from the early Byzantine world; some were translations from Arabic of writers who had lived in the preceding four centuries; some were new works

⁵ d'Alverny (1982).

⁶ Glaze (2005).

⁷ An initial description of the project can be found in Green (2008).

that came out of the southern Italian medical 'school' of Salerno. Top of the list, as already mentioned, was Gariopontus' *Passionarius*, which seems to have proved popular because it offered a well-organised survey of medicine (save for surgery and gynaecology). Next was Constantine the African's own *Pantegni*, a translation of 'Alī ibn al-'Abbās al-Majūsī's *Kitāb Kāmil al-ṣina'ah al-ṭibbiyah* (*Complete Book of Medicine*), which in fact was not 'complete' (having been partially damaged in a shipwreck) but was comprehensive nonetheless. The other 'bestsellers' of the long twelfth century were various works of instruction (the *Articella*), pharmaceuticals, Salernitan *practicae* (comprehensive works of practical medicine), or women's medicine. But none, save the *Tegni*, was by Galen. In fact, many Galenic translations that we know were produced in this period are attested by no extant manuscripts at all that fall within the project's chronological limits.

Ironically, most of the Galenic texts that would come to dominate western European medicine for the rest of the Middle Ages were in fact translated into Latin in the twelfth century. Of the most widely disseminated Galenic works in Latin inventoried by the indispensable *Galeno latino* database, the top fifteen were all translated between c. 1076 and 1193 (Table 17.1).⁸

How, then, if not by the impact of his own writings, did Galen go from being a known, but hardly dominant author in the mid-eleventh century, whose vast corpus of original writings was almost completely undocumented in Latin, to being the preeminent authority in Latin medicine by the third quarter of the thirteenth century, a name invoked as often as was Hippocrates, and an author consulted as much if not more than his one other great rival, the eleventh-century synthesiser, Ibn Sīnā (Avicenna)? In some respects, we must be careful not to see the twelfth century as if its path was ordained. Developments unique to the thirteenth century itself, including massive efforts of textual recovery, have dominated our characterisation of 'medieval medicine' because we were unclear about their correct chronology. I have laid out elsewhere my arguments that the Amiens cleric, surgeon, and extraordinary bibliophile Richard de Fournival (d. 1260) likely lies at the heart of those developments.⁹ And Fournival's Herculean construction of the 'new Galen' corpus could not have happened had not the output of the Toledan and Pisan centres 'gone missing' in the first place.

Yet I do believe we can see the twelfth and thirteenth centuries as moving along a single trajectory, that is, in a growing appreciation for what Galen

⁸ I have made my own assessment of the most widely circulating Galenic works in Latin on the basis of *Galeno latino*, <http://www.galenolatino.com/> (accessed 10 August 2017).

⁹ Green (2018a).

TABLE 17.1 Most widely circulating Galenic texts in Latin translation

	Translation	Standard title	Translator	Nr. of extant MSS	
				12th cent.	total
1	<i>Tegni</i>	<i>Ars medica</i> (<i>Art of Medicine</i>)	Anonymous (eleventh century, from Greek)	20	121
2	<i>Commenta super Aforismos Ypocratis</i>	<i>In Hippocratis Aphorismos</i> (<i>On Hippocrates' 'Aphorisms'</i>)	Constantine the African	0	100
3	<i>Commenta super librum Pronosticorum</i>	<i>In Hippocratis Prognosticum</i> (<i>On Hippocrates' 'Prognostic'</i>)	Gerard of Cremona	0	96
4	<i>Ars medica</i>	<i>Ars parva</i> (<i>Art of Medicine</i>)	Gerard of Cremona	0	84
5	<i>De accidenti et morbo</i>	<i>De morbis et symptomatis</i> (<i>On Diseases and Symptoms</i>)	Anonymous (twelfth century, from Arabic)	1	74
6	<i>Commenta supra librum Regiminis acutorum Ypocratis</i>	<i>In Hippocratis De victus ratione in morbis acutis I–III</i> (<i>On Regimen in Acute Diseases according to Hippocrates I–III</i>)	Gerard of Cremona	0	73
7	<i>De malicia complexionis diverse</i>	<i>De inaequali intemperie</i> (<i>On the Anomalous Dyskrasia</i>)	Gerard of Cremona	0	70
8	<i>De crisibus</i>	<i>De crisi</i> (<i>On Crises</i>)	Gerard of Cremona	0	63
9	<i>De interioribus</i>	<i>De locis affectis</i> (<i>On Affected Parts</i>)	Constantine	3	56
10	<i>De complexionibus</i>	<i>De temperamentis</i> (<i>On Mixtures</i>)	Gerard of Cremona	0	54
11	<i>De diebus decretoriis</i>	<i>De diebus ceticis</i> (<i>On Critical Days</i>)	Gerard of Cremona	0	53

TABLE 17.1 Most widely circulating Galenic texts in Latin translation (cont.)

	Translation	Standard title	Translator	Nr. of extant MSS	
				12th cent.	total
12	<i>De differentiis febrium</i>	<i>De differentiis febrium</i> (<i>On the Different Kinds of Fevers</i>)	Burgundio of Pisa	0	45
13	<i>Liber secretorum ad Monteum</i>	<i>Secreta</i>	Gerard of Cremona	0	43
14	<i>De virtute simplicis medicinae</i>	<i>De simplicium medicamentorum facultatibus I–V/VI</i> (<i>On the Capacities of Simple Drugs I–V/VI</i>)	Gerard of Cremona	0	42
15	<i>De virtutibus naturalibus</i>	<i>De facultatibus naturalibus</i> (<i>On the Natural Capacities</i>)	Burgundio of Pisa	0	36

uniquely had to teach about the theory and practice of medicine. The major question here, therefore, is how Galen’s reputation and visibility was transformed over the course of the twelfth century despite the apparent failure of his authentic works, coming out of Monte Cassino, Pisa, and Toledo, to find an immediate audience. I credit this success to what we might call a ‘stealth campaign’ – a slow but steady realisation that Galen and his writings held the key to finding the common principles in medicine, not simply as an ordered system of explaining the natural world as the basis for the material existence of the body, but also as a guide to the professional practice of medicine. The translators themselves were the first to realise this, which explains their investments of time. Constantine the African’s four Galenic translations are his longest works, after the *Pantegni*, and must have demanded inordinate labour, as did the subsequent efforts of Gerard of Cremona, working in Toledo (and also translating from Arabic), and Burgundio, working in Pisa (translating from Greek copies he acquired in Constantinople). But the presence of the translations alone wasn’t sufficient to create an audience for these works, a fact documented by the poor survival of early copies. Galen did not take over Western medicine because one key text transformed the West’s view of him,

or even because a select corpus of his works was suddenly available. This ancient Greek physician took on the stature he did in medieval Western medicine because he had been elevated to a new position by the valorisation of an eleventh-century monk, Constantine the African.

Work on the *oeuvre* of Constantine the African is still in its early stages. Only five of the three dozen works associated with him have been edited according to modern critical standards, and even of these, only one has been compared in full to its Arabic original.¹⁰ In part because of the paucity of philological investment in understanding the Constantinian corpus, we are still unclear about the order in which he produced the texts associated with him. The analyses presented here should be understood as tentative, therefore. Nevertheless, I suggest that we can see a progression in Constantine's works, from general unawareness or lack of interest in Galen as a medical authority, to increasing admiration and even awe. I believe his four translations of Galen's own works to be late products of his career, prompted by a desire to give his own students – Johannes and Adzo – not more introductory texts, of which Constantine had written plenty, or even specialised monographs, but models of sophisticated thinking and professional behaviour that aspiring physicians of Constantine's own day might emulate.

1 *Gloriosissimus Galienus: Constantine the African and the Search for a Medical Role Model*

In the mid eleventh century, before Constantine the African crossed over to Italy from North Africa, only a handful of Galen's authentic writings were available in Latin, and even these were mostly fragmentary. Pseudepigraphic writings pushed Galen's name recognition a bit further, but rarely in a way that could be said to be advancing truly Galenic theories about medicine, his theoretical foundations, social practices, or therapeutic goals. The Galen known to the early medieval Latin world was a Galen in bits and pieces.¹¹ Twelve Galenic or pseudo-Galenic works are known to have been circulating in Latin prior to Constantine's arrival, yet none of these, save Galen's *Ad Glauconem de methodo medendi* (*Therapeutics to Glaucon*), had much purchase in the evolving corpus of medical writings in the late eleventh or twelfth centuries. The

10 My comprehensive survey of Constantine's oeuvre is in progress, under the working title 'The Genesis of the Medical Works of Constantine the African and Their Circulation in the Long Twelfth Century'.

11 Fischer (2009; 2012; 2013).

impact of *Ad Glauconem* is, in fact, illustrative of Galen's relative invisibility as an authoritative figure. Translated perhaps in the fifth century, perhaps in Ravenna, the two books of *Ad Glauconem* cover various aspects of fevers, abscesses, swellings, and what we would now call other inflammatory processes. The *Ad Glauconem* actually circulated quite widely, being found now in over ten per cent of extant Latin medical manuscripts from the early Middle Ages. But a measure of how imprecisely Galen's identity came through can be seen in the fact that the *Ad Glauconem* was joined with four other texts in a regularly circulating ensemble, all six books now being ascribed to *Galenus archiatres idest medicus peritissimus* or *sapientissimus* (Galen, Chief Physician, that is, the most expert [or most learned] physician). This composite 'Galen' (a collection of materials from the Methodist physicians Soranus and Caelius Aurelianus, as well as materials of unknown origin gathered in a work called the *Liber tertius*), after being supplemented, probably in the early or mid eleventh century by some excerpts from Alexander of Tralles on gout, then became the foundation for what was, numerically, the most widely disseminated Latin medical book of the long twelfth century: the *Passionarius* of the Salernitan physician Gariopontus, a reorganised and supplemented revision of the *Ad Glauconem* ensemble.¹² Combined, these works provided an impressive survey of the medical art, omitting only surgery and gynaecology.¹³ In many manuscripts, this whole complex was attributed to Galen. But beyond the name, there was little recognisably 'Galenic' about the collection at all.

Around 1076, Galen's fortunes in the Latin West would begin to change. Constantine the African (d. before 1098/99), a merchant or physician, or perhaps a merchant-physician, came to Italy around the year 1076, bringing with him a cache of major and minor works in Arabic medicine. Constantine initially arrived in the port city of Salerno, but soon migrated to the great monastery of Monte Cassino, just south of Rome, then in the midst of an extraordinary cultural revival under its greatest abbot, Desiderius (d. 1087). Constantine can be credited with having translated or 'edited' about three dozen different works.¹⁴ Among them were four texts by Galen that he translated from Arabic

12 Fischer (2003); Knight (2015).

13 The constitution of a gynaecological corpus in the mid and late eleventh century went through a similar, but separate process. Monica H. Green, 'Constantine's *De genera* Revisited: Women's Medicine at Monte Cassino', paper presented at International Congress of Medieval Studies, Kalamazoo, MI, May 2016.

14 Constantine is rightly most famous as a translator from Arabic into Latin. However, recent research has demonstrated that several works credited to him by his near-contemporaneous biographers were likely compilations made out of pre-existing Latin sources. Similarly, he was credited with the translation of Galen's *Tegni*, even though we know

into Latin: Galen's commentary on the Hippocratic *Aphorisms*; the *Megategni* (*Therapeutic Method*), apparently in the condensed version that was already circulating in Arabic; the *De interioribus* (*On Affected Parts*), Galen's great work on determining the locus of altered physiology within the body; and the *De placitis Hippocratis et Platonis* (*On the Doctrines of Hippocrates and Plato*), a broad-ranging work covering various aspects of physiology and anatomy on the nature of the soul, the processes of vision, and more.¹⁵ Also associated with Constantine, though almost certainly not the direct work of his hand, was a translation from the Greek of the *Tegni* (*Ars parva*), which here lacked the final section where Galen listed all his books.

These Galenic works nearly disappeared during the twelfth century; one of them did completely. Only the *Tegni*, the work of a still unidentified Greek translator, managed to earn a following, and even then only after some delay. Here, it is important to describe its earliest known witness, which has hitherto been invisible in historiography on both Galen and Constantine, in part because it carried a misleading date in the catalogue.¹⁶ This is Paris, Bibliothèque Nationale de France, MS lat. 7029, a composite manuscript which we can now identify as standing at the origin of the *Articella* tradition.¹⁷

part 1 (fols 1–32, s. xi⁴/⁴): Galen, *Tegni*; *Regimen acutarum*; early medieval commentary on *Aphorisms*.

part 2 (fols 33–48, s. xiii in.): *Isagoge*, *Prognostica*, *Aphorisms*.

part 3 (fols 49–89, s. xi⁴/⁴): Theophilus, *De urinis*; Philaretus, *De pulsibus*; Anonymous, *De passionibus mulierum B*; excerpt from Constantinus Africanus, *Viaticum*, Book VI; 'Liber de natura animalium' (Lectio 33 from Isaac Israeli [tr. Constantinus Africanus], *Diète universales*), 'Liber

now that this was drawn from the Greek, a language Constantine does not seem to have known well.

15 In the current version of *Galeno latino*, the eleventh-century translator Constantinus Africanus is credited with only two translations of Galenic works, the commentary on the *Aphorisms* and the *Methodus medendi* (*Therapeutic Method*). I can confirm that he was also responsible for the *De interioribus* (*On Affected Parts*), which is extant in three twelfth-century copies, and was credited by his near contemporary biographers with a translation of *De placitis Hippocratis et Platonis* (*On the Doctrines of Hippocrates and Plato*).

16 Fortuna and Urso (2010).

17 Although BNF lat. 7029 has been noted before in *Articella* scholarship (e.g. Gasper and Wallis (2004)), its importance for the dating of the *Articella* tradition (including the *Tegni* and *Regimen acutarum*) was not noticed until 2008; Green (2008: 20, 46–47). The late eleventh-century dating of parts 1 and 3 of BNF lat. 7029 was first asserted by Avril and Zaluska (1980: 77), and noted in Hanson and Green (1994: 1074).

de natura arborum' (Lectio 27 of *Diete*), 'Liber de natura herbarum' (Lectio 32 of *Diete*), 'De natura saporum' (extracts from Constantine's *Liber de gradibus*).¹⁸

The middle section is a replacement, added in the early thirteenth century to replace quires that had gone missing. The two outer sections are part of the same original campaign, presenting the earliest copy of the *Articella*, what has long been known as the foundational collection of introductory teaching texts in the Western medical tradition. What distinguishes BNF lat. 7029 – what makes it a unique witness in the history of Western medicine – is that these two earlier sections do not simply date from the last quarter of the eleventh century, but, as Francis Newton, the world's leading authority on the scriptorium at Monte Cassino in the eleventh century, has now established, they are the work of a known scribe at Monte Cassino.¹⁹ This means that we can, at last, localise the creation of the *Articella* – whose origins have hitherto baffled generations of historians – right at Monte Cassino. We can also see that both the *Tegni* and the Hippocratic *Regimen acutarum* (which Constantine had translated from the Arabic, as he had Ḥunayn ibn Ishāq's *Isagoge* and the Hippocratic *Prognostic*) were indeed integral parts of the teaching plan of the *Articella* from its very inception.

Why they did not remain so is an intriguing question, but we cannot answer it here. Although we have thirty-five extant witnesses of *Articella* collections from the long twelfth century, only a portion of them include either the *Tegni* or the *Regimen acutarum* (or both), and most of these are from late in our period.²⁰ The *Tegni* clearly received a boost in visibility after the Salernitan writer Bartholomeus not only wrote a commentary on it, but asked the Pisan judge, Burgundio, to complete the work by translating the sixth and final book.²¹ That act of rendering Galen's own list of his writings into Latin may have been critical for the Burgundian translation project at Pisa: the completion of the *Tegni*, done around 1150, was not the first of Burgundio's translation efforts (he had earlier translated some religious texts), but it was the first of some twenty medical translations from Galen that he made.

18 My thanks to Anna Dysert for identifying the excerpts from Isaac Israeli.

19 Francis Newton, personal communication, 30 August 2016. Newton surveys the evidence for Cassinese scribes' work on medical manuscripts in Kwakkel and Newton (forthcoming).

20 As noted in Table 17.1, there are 20 extant copies of the *Tegni* from the long twelfth century. But not all of them are found within *Articella* collections.

21 Wallis (2008). On Burgundio of Pisa and his role as translator, see Urso (Chapter 19) in this volume.

But surely, we might ask, even if the *Tegni* was delayed in its circulation, Constantine's translation of Ḥunayn ibn Ishāq's *Isagoge*, understood to be an introduction to Galen's *Tegni*, must have been instrumental in propelling the Latin West into an embrace of Galenic medicine. And the several commentaries thereon composed over the course of the twelfth century must have helped.²² The *Isagoge* did indeed train the student in what we generally consider the basic precepts of Galenic medicine. But in fact, Ḥunayn (in Latin, Johannitius), at least in Constantine's translation, never mentions Galen within the substance of the text, and the earliest commentaries do little to develop Galen's personality or authority. Rather, it is in others of Constantine's writings that a developed sense of Galen's authority is revealed. In his increasing valorisation of Galen, Constantine, in his writings, portrayed Galen not simply as a name to be invoked, but as an author whose specific opinions tied together the often vast considerations of anatomy, physiology, therapeutics, and even 'professional performance' that the learned physician had to master. Brian Long, in his essay in this volume, sketches out several elements of Constantine's views on Galen.²³ Here, I add additional examples to suggest that Constantine's awareness of Galen, and his growing admiration of him, was something that developed over time and through the work he was doing translating the writings of other physicians. As noted earlier, in the absence of critical editions, we cannot be sure where Constantine is making his own mark on the texts he translates – whether by deletions or additions – or is merely replicating the emphases of his source authors. But even if he is merely echoing his source texts, Constantine is amplifying Galen's stature. I suggest that this growing awareness of Galen's significance prompted Constantine, likely towards the end of his career, to translate several of Galen's works himself.

In Constantine's early works, such as the *De elephantia* (*On Leprosy*), Galen is not mentioned at all. This work, a translation, apparently, of an original by the Qayrawan physician Ibn al-Jazzār, is a short treatise focused on describing the differential aetiologies of four manifestations of leprosy and their treatment. Similarly, in the *De oculis* (*On the Eyes*), a translation of a work by Ḥunayn ibn Ishāq, Galen is a non-presence: his only appearance is as the source for a collyrium 'good [to be used] once a day for dissolving and healing apostemes

22 On Galenic commentaries in the thirteenth century, see McVaugh (Chapter 20) in this volume.

23 See Brian Long (Chapter 18) in this volume.

and ophthalmia'. Galen has no higher status here than Paul of Aegina and Oribasios, both of whom are cited more often for their cures.²⁴

By the time we get to what seems to be Constantine's middle period, however, references to Galen begin to come thick and fast. In the *De melancholia* (*On Melancholy*), a translation of Ishāq ibn 'Imrān's *Maqāla fī al-mālīḥūliyā*, the first-century Greek physician Rufus is cited most frequently, replicating echoes that Ishāq ibn 'Imrān preserved of the major monograph from antiquity on the topic.²⁵ But Galen is the next most important authority, in some cases with the titles of his works being cited.²⁶ In the *De stomacho* (*On the Stomach*), written for Constantine's patron Alfano, Bishop of Salerno, before his death in 1085, we see Galen's authoritative stature on full display. Hippocrates is cited twenty times in all, Galen sixty-three. In nearly a third of those cases, a specific title is invoked.²⁷ Again, we should assume that most if not all of those citations originated in Constantine's source text.²⁸ That Constantine should choose to preserve them, however, given his habit of condensation, is notable.

Constantine would likely have been working on the *De stomacho* at the same time he was working on his *magnum opus*, the *Pantegni*, which was dedicated to his other patron, the abbot of Monte Cassino, Desiderius. Since Desiderius died just two years after Alfano, we have a *terminus ante quem* for the production of, at least, the first part of the *Pantegni*, the *Theorica*. That book similarly foregrounds Galen as a major presence, from passing references to dietetics to repeated references to his views on anatomy, pulses, and symptoms. Several of Galen's texts are cited by name: *in libro quem de anhelitus fecit iuuamento*, *in libro de febribus*, *in libro subtilis regiminis*, *in libro de custodia sanitatis*, *in libro loci passibilis*, *in .iiii. particula libri de interiorum membrorum passione*, *in libro sermonis*, *super hunc aphorismum*, *super secundam particulam epydimie*, *super primam particulam epydimie*. What should also be noted is who is *not* cited

24 In the fullest version we have of the *De oculis*, the preface mentions the *Viaticum* and *Pantegni* as having already been written. However, what seems to be an earlier version of the text is also documented, which lacks the preface and bears other signs that it reflects the text's original form.

25 Pormann (2008).

26 Garbers (1977).

27 Montero Cartelle (2016). The Galenic texts cited by name are: *De accidentibus [et morbo]*, *Super Epidimiam Ypocratis*, *super hoc [scil. Aphorismos]*, *De accidenti et morbo*, *Megategni*, and *liber Complexionis*.

28 Montero Cartelle identified two copies of Ibn al-Jazzār's Arabic original, but did not edit it. He also notes (2016: 129, 167, 169) that the references to the *Megategni* do not precisely match the text that has come down to us. See my comments below suggesting that the *Megategni* may have been translated late in Constantine's career.

here. Constantine is famous, of course, for having suppressed the names of his Arabic authorities, and we find none here. Yet, in fact this landscape is bare of virtually any authorities at all save Hippocrates and Galen. The ancient physician Rufus is cited once, and the late antique encyclopaedist Paul of Aegina also just once.²⁹

Given his exposure, by at least the mid 1080s, to an array of Galenic titles, how did Constantine choose which ones he wished to translate? Two 'curricula' in medicine had been set in late-antique Alexandria: one was for the Hippocratic writings; the other, consisting of sixteen books, was of those works of Galen of Pergamum best suited to introducing the novice to the art of medicine.³⁰ Constantine clearly knew of the Galenic curriculum. He listed all of the sixteen books in his abbreviated translation of al-Majūsī's introduction to the *Pantegni*.³¹ As with his source al-Majūsī, however, Constantine's point was not to claim that there was still need to follow the Alexandrian curriculum to the letter, but that its range of topics showed what needed to be covered in any comprehensive account of medicine. Thus, still following al-Majūsī, he criticised, in turn, Oribasios and Alexander of Tralles (and, he added, Paul of

29 In citing the *Pantegni, Theorica*, I have used Kaltio's edition (2011), checking it against the digital reproduction of the MS. The Helsinki MS lacks Book I and Book x.11-[end], and for those sections I have consulted The Hague, Koninklijke Bibliotheek, MS 73 J 6 (*olim* 542), s. xi⁴/4, produced at Monte Cassino under Constantine's supervision, available at <https://www.kb.nl/themas/middeleeuwen/liber-pantegni> (accessed 10 August 2017).

30 On this, see Garofalo (Chapter 3) in this volume.

31 Iskandar (1976) for discussion of the Alexandrian list. Hague, MS 73 J 6, fol. 1rb.: Piriton hereseos medicorum particula una. [On medical sects (for beginners) in one part].

Microtegni i. [The minor art (*Ars parva*) in one part].

Pulsuum minores particule .ii. [Of pulses in two small parts].

Epistule ad glauconem .ii. [Letters to Glaucon in two parts (i.e., the *Therapeutics to Glaucon*)].

De elementis .i. [On the elements in one part].

De complexionibus tres. [On the complexion in three parts].

De uirtutibus naturalibus .iii. [On the natural faculties in three parts].

De anathomia .v. [On anatomy in five parts].

De morbo et accidentibus .vi. [On disease and things befalling (the body) in six parts].

Megapulsuum .xv. [The greater books on the pulse in fifteen parts].

De interioribus membris .vi. [On the internal organs in six parts].

Criseos .iii. [On crises in three parts].

Ymera criseos .iii. [On critical days in three parts].

De febribus .ii. [On fevers in two parts].

Megategni .xiii. [The great art (i.e., *Therapeutic Method*) in fourteen parts].

De regimento sanorum .xii. [On the regimen for the healthy in twelve parts].

Aegina) for the limitations of their synthetic works, before explaining that his own work would provide the necessary information for maintaining the health of the healthy and treating the illnesses of the infirm.³²

Hence, unlike Burgundio of Pisa working several decades later, Constantine does not seem to have had the Alexandrian canon specifically in mind in choosing which Galenic books he wished to translate. He seems to have translated the *Megategni* and the *De interioribus* (*On Affected Parts*) not because they were part of the Alexandrian canon, but rather because they were works that he had already become familiar with in working on the *De stomacho* and the *Pantegni*. Obviously, availability must have been a decisive factor in what Constantine translated. A detail reported by the mid-twelfth century Salernitan writer Mattheus Ferrarius informs us that after his initial arrival in Italy, Constantine had returned to North Africa to obtain books in fields where the Latins were lacking.³³ Otherwise, we hear nothing of him making any return voyages to collect more books; indeed, if the circumstances of his departure from North Africa were as hostile as the Cassinese accounts imply, there would have been little opportunity for him to return.³⁴ The loss of the better part of part 2 of the *Pantegni*, the *Practica*, which addressed diseases throughout the body and the therapeutic measures to treat them, may have been another impetus for him to begin to translate Galen's authentic texts.

Although this is impressionistic, my sense is that he translated the four Galenic works in this order:

1. commentary on the *Aphorisms*
2. *Megategni*
3. *De interioribus*
4. *De placitis Hippocratis et Platonis*

The commentary on the *Aphorisms*, dedicated to his disciple (and likely also his Latin editor), Adzo, is the only one of the Galenic translations to state explicitly that it is a translation from the Arabic. Constantine implies, in fact, that this is his first translation of Galen:

32 Al-Majūsi had in fact included a much longer list of predecessors whose works failed to meet his standards of comprehensiveness, brevity, or clarity. In my forthcoming work on Constantine's *oeuvre*, I argue that Constantine was not simply suppressing the names of his Arabic forebears (an act that produced a charge of plagiarism as early as the twelfth century), but that he also deliberately chose to list only those authors whose works were already available in Latin.

33 Green (1994: 122, 150).

34 Constantine's departure may have had nothing to do with personal animosity against him, but with larger political conditions at the time.

Although in your constant pleas, my son Atto, you often said to me that I should transfer out of the Arabic language into the Latin language something from the works of Galen, I nevertheless refused for a long time, hesitating to translate the works of so great a philosopher. But because you did not cease to ask, and because the Latin language was so lacking [in Galen's works] ... acquiescing to you, I decided to render a certain work of his on the *Aphorisms* of the most esteemed Hippocrates.³⁵

If we are correct in seeing Constantine himself as the main agent in assembling the *Articella* – and we will remember that three of the eventual seven texts in the collection were his translations (*Isagoge*, the Hippocratic *Prognostic* and *Regimen acutarum*) – then it makes perfect sense that he should have seen Galen's commentary on the Hippocratic *Aphorisms* as integral to his agenda of fully explicating the basic precepts of medical diagnosis. After all, the *Aphorisms* had played a crucial role in Galen's own attempts to create a unified system of medical knowledge. If, as it seems, Constantine's translation was based from the start on the lemmata of the new Latin translation of the Greek text of the *Aphorisms*, which suddenly emerged in the late eleventh century in the context of the *Articella*,³⁶ this would be further evidence of the tight integration of the new teaching agenda Constantine had established at Monte Cassino.

Next, I believe, was Constantine's translation of the *Megategni*. The *Megategni* was the translation of Galen's fourteen-book *Methodus medendi* (*Therapeutic Method*), of which he may have translated an abbreviated Arabic version that couched Galen's statements (including his many boastful case histories) in the third person.³⁷ In his prologue, dedicated to his other pupil,

35 The text of Constantine's translation of Galen's commentary on the Hippocratic *Aphorisms* remains unedited. I have used Leipzig, Universitätsbibliothek, MS 119, s. xiii²/⁴ (France), fol. 40ra, as my base text, comparing it to several other mid-thirteenth century copies: 'Licet petitionibus tuis continuis fili Hacto. mihi sepius dicens ut ex opusculis G. aliqua latine lingue traducerem ex arabica. diu tamen multum negavi. hesitans tanti transferre opera philosophi. Setcum petere non desisterens et latinam linguam tanto carere lute te dolere dicens. Tandem condescendens tibi opus suum quondam super afforimos Ypocratis gloriosissimi transferre destinaui'.

36 On the new *Aphorisms* translation, see Wallis (2011).

37 My thanks to Brian Long for the suggestion that Constantine's *Megategni*, which has long been recognised as an 'abbreviation' of Galen's massive work, may reflect not Constantine's own efforts at condensation, but replication of an abbreviated version that already existed in Arabic. Cf. Sezgin (1970: 150).

Johannes, Constantine now shows no hesitation or inadequacy in engaging directly with the ‘most glorious Galen’.³⁸ That phrase, *gloriosissimus Galenus*, had already appeared in Constantine’s translation of Ibn al-Jazzār’s *De stomacho*, meant, as has been noted, for Constantine’s patron, Alfanus.³⁹ The *Megategni* was among the more frequently cited works in that mid-career synthesis. It also played an important role in the *Pantegni*: beyond its inclusion in the list of the Alexandrian canon that opened the text, the *Megategni* was cited

38 Constantine’s *Megategni* has never been edited. What follows is a partial transcription of the earliest manuscript, Boulogne-sur-Mer, Bibliothèque municipale, MS 197 (used to confirm the original dedication), and the printed edition in *Omnia opera Ysaac* (Lyons, 1515), vol. II, fol. 189ra–b: ‘Quamvis carissime fili Johannes ingenui acutissima in literis habeas, in naturis etiam rerum indagandis ut expertus sum mirabiliter ualeas quorum amen presenti me status existentium corporea patefactam. Antiquorum enim volumina. non solum quia multa. et particulariza continent orient; serum etiam que non sunt accident adduct. et que sunt tenenda despiciunt. Mos etenim antiquorum maxime gloriosissimi galieni fuit. ab uniuersalibus ad individus multiplicité. dividende descendre. et diluere ut memorie introducendorum firmiter solidarentur. sepius. sepiusque repetere. Quo circa te directe fili sincero paternitatis affetto moneo. ut yerba librorum galeni precipue megatechni’. et si magne sint nullatenus habeas odio: ne vide ea in fastidio haber cogitas: inde in erroris deuin’ in fine improuis decidas. Quanto enim velocioris et inuestigabilioris es intellectus: eo amplius in libris philosophicis sepiissime legis: et intellecta clari vides: et nondum attentata perpendere incipies. Sed tamen quia megatechni pre nimia sui quantitate non oportet vbique portari: eo vt facillime quouis feratur: eum tibi competenter abbreviabo. In cuius verbis si frequenter studio se desudaueris: et que legis in fundamento memorie firmissime fundata seruaueris: proculdubio et noticiam et curas egritudinum aptissima ratione scies. Quoniam intentio **gloriosissimi Galieni** in hoc libro fuit ad redarguendam quandam sectam medicorum: id est suorum quorundam magistrorum: quorum quidam Thefilus nuncupabatur: oportet nos de eorum discordia: quemadmodum huic nostro libro conueni: disputare propter magnitudinem erroris ignorantium medicorum falsitati illius secte credentium: etsi non nisi rari in his nostris temporibus: eorum annuentes intentioni reperiantur. Non enim certe rationis falsitas longa post tempora ostensa sumpta est. vnde eorum libri ad legendum et ad scribendum viles effecti: necessario sunt destructi. Eorum autem intentio tempore Galieni nouitia et desiderabilis fuit: promittentium quippe et spondentium artem medicine spacio sex mensium competenter compleri: et paruipendentium et deridentium dicta **gloriosissimi Hippocratis**: eo quod tam prolixo quod non debeat: et quod arti medicine non necessarium erat: scripserat. Cognito tandem sue repromissionis experimento: mox totus inopinate falsitatis error apparuit: et pura logicorum veritas abscondi vltra non valuit. Quanto enim latius horum auctoritatem animaduenterunt: eo amplius et certiores: et vtiliorem eam inuenerunt: vnde et post se venturis scriptis denotatam reliquerunt. Huius rationis causa et eorum libri deleti sunt: **et Galieni et gloriosissimi Hippocratis** retenti ac dilecti sunt’.

39 Ibn al-Jazzār, *De stomacho*, 16.117, ed. Montero Cartelle (2016) 168 and 224.

by name in three instances in the parts of the text that Constantine himself finished, in each case providing an anecdote about Galen's clinical practice.⁴⁰

The *De interioribus* lacks any dedication, but it is presented as the complement to the *Megategni*: whereas the former (which is mentioned explicitly) is focused on the cure of diseases, the latter turns to the knowledge needed to discern where in the body those conditions are located.⁴¹

Why Constantine chose to translate the *De placitis Hippocratis et Platonis* (*On the Doctrines of Hippocrates and Plato*), which I believe may have been his final translation, is a mystery, not simply because, in the absence of the translation itself, we cannot know if he provided some prefatory explanation of his interest in the text, but also because this is a relatively rare Galenic text in all traditions, including Greek and Syriac; the Arabic translation, though witnessed by other writers, survives in no extant copy.⁴² How did Constantine even know of its existence? It was cited by Nemesios, in his *On the Nature of Man*, though not with this title. Ḥunayn ibn Ishāq made a translation into Syriac, and he employed it for his treatise on the eye. But as we have noted, Constantine made no mention of Galen in the *De oculis*, his own translation of Ḥunayn's treatise on the eye, which even in the Arabic had not mentioned Galen's treatise by name. The *De placitis Hippocratis et Platonis* is, nevertheless, a major work in Galen's anatomical corpus, and may have been attractive for that reason, since Constantine translated no other explicitly anatomical text, by Galen or anyone else, beyond the anatomical books of al-Majūsī's *Pantegni*. Or, it may have proved of interest for debates about the nature of the soul, stimulated by Alfano's translation of Nemesios' *On the Nature of Man*. The fact that Constantine's translation has not survived likely indicates that it was left unfinished on his desk when he died. That his Cassinese biographers knew about it, however, suggests that enough of it existed that it should be listed among his works.

Again, it is premature to try to assess Constantine's agenda with these translations, in the absence of critical editions. But one small note may signal why

40 I cite these according to titles and enumeration in vol. 2 of the Lyons 1515 edition, but I have confirmed their presence in the earliest MSS: *Theorica*, Book 9, Chapter 26 – *De passionibus in instrumentis cibi* (fol. 46rb); *Practica*, 1, Chapter 3, *De exercitiis et labore* (fol. 58va); and *Practica*, 1, Chapter 6, *De mundificatione corporis ad custodiam sanitatis*. See also below.

41 Galen, *Opera*, ed. Bonardus (1490) II.115ra–139vb.

42 Constantine's translation has never been acknowledged in scholarly literature on the text; Nutton (1988); DeLacy (1978–84), editor, translator, and commentator. Constantine's Cassinese biographers cite the work under the title *Disputatio Platonis et Hippocratis in sententiis* (*Debate between Plato and Hippocrates on Various Opinions*).

he was led to engage with Galen's *ipsissima verba*. As has long been known, Constantine did not complete his translation of al-Majūsī's *Kitāb Kāmil al-ṣinā'ah al-tibbīyah*, the *Pantegni*, which was to be his own *magnum opus*. This 'Complete Book of the Medical Art' comprised, in the original Arabic, two large parts: one, in 10 books, on theory, and another, also in 10 books, on practice. Constantine readily completed the *Theorica* of the *Pantegni* and it was this, it seems, that he dedicated to Desiderius sometime before the latter's ascension to the papal throne in the spring of 1086. In the introductory section of the *Theorica*, he spoke of the *Practica* as if it would have all ten parts as originally composed in Arabic. Constantine was able to translate book 1 of the *Practica*, a general regimen of health, and part of book 2, on 'proving' medicines. He also translated, perhaps at this same time, the first third of book 9, on surgery. But the rest of the *Practica* seems to have been damaged or even totally lost, the result of a storm that hit his ship when he neared the Italian shore. We also have a story that his patron Alfanus 'wished to reimburse' him for his attempts to complete the *Practica*.⁴³ Exactly what that meant is unclear, but we can now document that Constantine did, in fact, also translate *Practica* book 6 (on diseases of the head and neck), much of book 7 (on diseases of the thorax and abdomen), and all of book 10 (the antidotarium) of al-Majūsī's original text. Books 6 and 7, which circulated together, show signs of having left Constantine's desk in draft form: chapter divisions are lacking and there are other indications that what we have is not a polished text of the *Pantegni*, *Practica*, but a mock-up of an attempt to 're-create' it.⁴⁴

In translating *Pantegni*/*Liber regalis*, *Practica*, book 6, chapter 15, on tremors of the heart, Constantine inserted a reference to the *Megategni*. The passage refers to a case where a man would suffer from a heart tremor on an annual basis, though it would be relieved with administration of phlebotomy. Al-Majūsī's original had simply attributed the information to Galen, making no mention of the source text. Constantine, however, adds the specific detail that this case is recounted in the *Megategni*.⁴⁵ In fact, it is not. It appears in the

43 Green (1994).

44 Green (2017).

45 Constantinus, *Pantegni*, *Practica*, 6.15, Berlin, SBPK, MS lat. qu. 303a, s. xii med. (Italy), fol. 10r: 'Item si tremor cordi acciderit. inquire utrum sit ex mala complexionem calida. aut humiditate sanguinolenta. et tunc festinantur basilicam incidere. G. In megategni narrat hanc passionem cuidam homini extitisse unoquoque anno. sed cum eo flebothomoto passio cessauit'. I have confirmed the parallel reading in Stephen of Antioch's translation, the *Liber regalis*, from Berlin SBPK, lat. fol. 74, s. xii², fol. 180r: <http://resolver.staatsbibliothek-berlin.de/SBB0000AF4E00000000> (accessed 10 August 2017); and in the 1492 edition, *Practica*, 6.17, fol. 138vb. Neither has any mention of the *Megategni*.

De locis affectis,⁴⁶ which, of course, Constantine translated as *De interioribus membris*.⁴⁷ The error seems minor: two substantial works, both with multiple case histories, being confused. But perhaps we can see here an inkling of what drove Constantine to seek out both the *Megategni* and the *De interioribus*: they were filled with such stories of a practicing physician putting his theories about anatomy and physiology to the test with real patients.

2 The Galenic Programs of Toledo and Pisa

How Constantine's translation program at Monte Cassino in the latter part of the eleventh century connected with the agendas of his successors in the twelfth century has never been investigated. No known intellectual or institutional pedigree connects them all. Indeed, with two exceptions (one of them being Burgundio's completion of the anonymous translation of Galen's *Tegni*), it has never even been demonstrated that the later translators knew of their predecessor's work. Stephen of Pisa, Constantine's most vehement critic, a notary and 'student of philosophy' in the crusader state of Antioch, certainly knew of Constantine's failed attempt to complete the *Pantegni*. He ended up retranslating in full 'Alī ibn al-'Abbās al-Majūsī's *Kitāb Kāmil al-ṣinā'ah al-ṭibbīyah*, not simply because it was incomplete, he said, but also because 'the other part [that had been translated] had been vitiated through the hot-headed deceit of the interpreter'.⁴⁸ Stephen says nothing in his critique of Constantine to indicate that he had a problem with Constantine's portrayal of Galen in the *Pantegni*, however. Indeed, there is no indication that Stephen had much interest in Galen at all.

The same could not be said of Gerard of Cremona and Mark of Toledo working in Toledo later in the twelfth century, or Burgundio of Pisa, working in that city in the latter half of the century, drawing on Greek originals he had obtained

46 Galen, *Loc. Aff.*, 5.2, ed. Kühn (1824) VIII.305.

47 My thanks to Vivian Nutton for identifying the source passage of this case history. Cf. Constantine's Latin translation, *De interioribus membris*, 5.2: Galen, *Opera*, ed. Bonardus (1490) II.132va: 'Preterea scio quendam huiusmodi habentium quoque anno hoc malum in vere habere: seruauit quoque hanc dietam sola cum flebotomia tribus annis: vnde coactus sua consuetudine sanguinem priusquam hanc pateretur passionem detraxit: et hoc assuetans pluribus annis: et omnes dietas vt oportet custodiens: mortuus tamen est ante senectutem sicut mortui sunt hii: quorum quidam patientes febrem acutam sincopim inciderunt: et alii sincopim in sanitate habentes mortui sunt'. This edition is actually a conflation of Constantine's translation and the later one by Burgundio of Pisa.

48 Burnett (2000: 27). See also Burnett (2006; 2013).

TABLE 17.2 Galenic texts retranslated by Gerard of Cremona or Burgundio of Pisa

Constantine	Gerard of Cremona	Burgundio of Pisa
<i>Tegni</i> , ^a Books I–V	[Ibn Ridwan's comm. on <i>Tegni</i>]	<i>Ars medica</i> , Book VI (list of Galen's books)
<i>Megategni</i>	<i>De ingenio sanitatis</i>	<i>De methodo medendi</i> VII–XIV
—	<i>De complexionibus</i>	<i>De temperamentis</i>
Galen's comm. on Hipp. <i>Aphorisms</i>	—	<i>In Hippocratis Aphorismos commentaria</i> I–IV 59 (incomplete)
<i>De interioribus</i>	—	<i>De locis affectis</i>
—	<i>De morbis et symptomatis</i> (= <i>De accidenti et morbo</i>) ^b	<i>De symptomatum differentiis</i>

- a As explained, it is unlikely that this translation of the *Tegni* (*Ars medica*) from the Greek was the work of Constantine himself. But I list it here as part of the Cassinese corpus, as it very clearly came out of the milieu of Monte Cassino and was, indeed, attributed to Constantine by his own biographers.
- b The assignation of this translation of *De morbis et symptomatis* to the Toledo school is not secure. The text only appears once in our corpus, in Boulogne-sur-mer 197, s. xiii in. (N. France), a very unusual codex that also has unique copies (for our corpus of twelfth-century MSS) of Burgundio's *De temperamentis* and Constantine's *Megategni*. There is very little literature on the text, though see Gundert (2009: 148–152).

in Constantinople. Of the twenty-one medical translations ascribed to Gerard, ten were of Galen. Three of Mark's four translations were of Galen, and all of Burgundio's twenty medical translations were of Greek Galenic texts. Aside from Ibn Riḍwān's commentary on the *Tegni* and Avicenna's *Canon* (which can be taken as a condensation of Galenic medicine in all its forms), no Arabic or Greek commentators on Galen were rendered in Galen's stead. For this third generation of translators, making Galen available was the principal objective. Indeed, it is striking that the three major translation programs had so little overlap (see Table 17.2). That Burgundio was genuinely ignorant of Constantine's translations of the commentary on the *Aphorisms*, the *Megategni*, and the *De interioribus* when he retranslated them is certainly possible; as I have indicated, all three texts had limited circulation in the twelfth century. In general, though, the Toledan and Pisan corpora were complementary of the Cassinese tradition. Gerard's translations of Galen's commentaries on the Hippocratic *Prognostica* and *Regimen acutarum*, and then 'Ali ibn Riḍwān's commentary

on Galen's *Tegni*, dovetailed perfectly with Constantine's translation of Galen's commentary on the *Aphorisms*, creating, in an instant, the fuller *Ars commentata* that would replace the simple *Articella* in university circles.⁴⁹

However, this was not a smooth process, and there is an odd delay of four to five decades between the completion of the Toledan and Pisan translations and any signs that they were beginning to have an effect on Western intellectual traditions. It was only in the middle decades of the thirteenth century that these Galenic translations would be retrieved and incorporated into the canon of leading medical works. As I have indicated, although Avicenna's *Canon* began to elicit interest here and there in the 1220s,⁵⁰ the combined evidence of extant manuscripts, book inventories, and textual citations all suggest that the Galenic corpus was not 'discovered' until the 1230s or later. Although a cache of translations of al-Razi had escaped from Toledo in the later twelfth century, the Galenic translations, as well as Gerard's other medical books, seem to have been kept tightly within his circle of students, who transported them back to Cremona after his death. The circumstances that kept most of Burgundio's works invisible for several decades are unknown. Who Richard de Fournival's accomplices were in retrieving and newly copying these texts has yet to be revealed. Nevertheless, it is unquestionable that Richard, and a growing band of learned physicians and intellectuals, was driven by a commitment they already had to the works and theories of the great ancient Greek physician.

It is difficult to believe that the singular success for Galen in this period was due solely to his *Tegni* (*Ars medica*). Yes, it enjoyed increasing popularity by the latter part of the twelfth century and close engagement with its precepts unquestionably spread understanding of the basic concepts of Galenic medicine. Commentaries on the text by Bartholomeus of Salerno surely increased its influence. Yet an introductory text was unlikely to have fuelled a desire to engage with Galen's longer and more rigorous works, and surely cannot explain either Gerard of Cremona's or Burgundio's interests in the Galenic corpus. Those translators, working in environments where Galen's prominence would have already been unquestioned – reconquered Toledo, in Gerard's case, and

49 As noted here, there are no extant copies of Constantine's translation of Galen's commentary on the *Aphorisms* from the long twelfth century. When it first shows up in the second quarter of the thirteenth century (Leipzig, Universitätsbibliothek, MS 119, and Paris, BnF, MS lat. 6860A), it has already been incorporated into the *Ars commentata* collection. For other evidence of dovetailing between the Cassinese and Toledan corpora, see Green (2018a).

50 Chandelier (2017).

Byzantine Constantinople, in Burgundio's – likely were driven by perceptions of medicine's possibilities not tied just to words they found in books. In Toledo and in Constantinople, they likely saw Galenic medicine in action, and maybe even witnessed active teaching of it.

But for Galenic medicine to be truly embraced in Latinate Europe, the availability of Galenic writings was not by itself sufficient. Constantine the African successfully established a Galenic perspective on medicine as the core of the Western medical curriculum when he assembled the *Articella* and made Ḥunayn ibn Ishāq's *Isagoge* its centrepiece, and when, setting aside any nominal commitment to the centuries of synthesis created by his predecessors in the Islamicate world, Constantine presented the *Pantegni* as primarily presenting the views of Hippocrates and Galen. Even if Constantine's direct translations of Galen's works had little effect in the century after their creation, a coherent picture of Galenic medicine was sustained (with just a few discordant notes) in most of the texts he produced, from the *Viaticum* to the specialised treatises on the stomach, and sexual intercourse. William of Conches, in his *Philosophia mundi* (written in the second decade of the twelfth century) quotes extensively from Constantine's *Pantegni*. Hermann of Carinthia and Bernardus Silvestris also knew the *Pantegni*. When Alexander Neckam described a basic curriculum of medicine in Paris in the 1180s, he included the *Pantegni*, listing Constantine as its translator – but Galen as its author.⁵¹

In the Cathedral of Santa Maria in Anagni, there is a fresco, painted in the 1230s, depicting Galen and Hippocrates engaged in conversation.⁵² Of equal height and similar dress, they face each other as equals. The elevation of Galen to a comparable stature in Latin medicine with the 'Father of Medicine', Hippocrates, was the achievement of the long twelfth century, a process completed by the retrieval of much of the Cassinese, Toledan, and Pisan corpora of Galenica in the thirteenth century and the creation of the 'new Galen' corpus. This transformation of the landscape of learned medicine was due, to a truly fundamental degree, to the work that Constantine had done to make Galen 'glorious'.

51 *Alexandri Neckam Sacerdos ad altare*, ed. McDonough (2010) 200: 'audiat Iohannitium et tam aphorismos quam pronostica Ypocratis et Tegni Galieni et Pantegni. Huius operis auctor est Galienus, set translator Constantinus'.

52 See Figure 31.8 in this volume. On Galen's medieval portraits, see Lazaris (Chapter 31) in this volume.

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Arabic-Latin Translations: Transmission and Transformation

Brian Long

Composed around 1135, book 6 of Henry of Huntingdon's *Anglicanus Ortus* recounts an encounter with a wizened old man who describes a number of novel, exotic herbs. This mysterious figure explains that his botanical and medical knowledge had ancient origins but was transmitted to him by Arab, Indian, and Chinese informants. In this passage, the *Anglicanus Ortus* nicely encapsulates the situation of Galenic medicine in the long twelfth century. In this period, from the eleventh to the thirteenth centuries, much of Galenic medicine did have ancient roots, but it had travelled long distances before reaching the Latin West via Arabic-Latin translations. Further, as Henry of Huntingdon's poem suggests, these novel sources were eagerly taken up, but continued to appear exotic to the Latin West.¹ Henry's immediate source, Constantine the African, reveals similar ambiguities. On the surface, his works purported to convey the authentic teachings of Galen and Hippocrates, knowledge that – at least according to Constantine's prefaces – he had painstakingly gleaned from classical medical works. Scholars, then as now, knew that Constantine's texts had origins in the Islamic world, and his works occasionally hinted as much, with an Arabic loan word here or novel *materia medica* there, while competing stories about Constantine explained his North African origins and his decision to render large numbers of Arabic works into Latin. But the mysteries that swirled around Constantine did not hinder his works' popularity; the extensive circulation of his texts suggests that many of Constantine's readers were convinced of their value. For much of the long twelfth century, then, many readers of medical texts encountered Galenic medicine as it was conveyed through the hazy, uncertain medium of these Arabic-Latin translations. A careful understanding of the way these texts mediated Galenic medicine is essential to our understanding of the development of learned medicine in the period.

¹ For more on Henry of Huntingdon and Constantine the African, see Black (2012).

1 Constantine the African (d. before 1098/99)

When Latins in southern Italy gained territory at the expense of Byzantine and Muslim rulers, they became cognisant of the limitations of the Latin tradition: where these rivals had impressive artistic and cultural traditions, Latins held ancient Rome but few of its glories. Southern Italy boasted a vibrant tradition of medical practice, but a far more modest theoretical tradition. To remedy these deficiencies, Constantine the African produced an extensive collection of Arabic-Latin translations; these works gave readers access to a wealth of Galenic medicine (including, to a limited extent, texts by Galen himself), packaged in an accessible and systematic form. Although careful research has allowed us to discern some of his debts to his predecessors and collaborators, Constantine remains singularly important for the Latin medical tradition; and after his death, many of Constantine's translations proved to be widely influential, circulating in large numbers and among a surprising range of readers, giving decisive shape to both medical Latin and medical theory.

Although Constantine's importance is not in doubt, our evidence for his biography is tangled, leaving much unclear about his religious background, early career, and indeed his time at Monte Cassino.² Considerations of space preclude a full discussion of these questions, but it is clear that in the middle of the eleventh century, Constantine travelled to southern Italy from North Africa, apparently bringing substantial numbers of Arabic medical manuscripts with him. Once in southern Italy, Constantine garnered considerable support from prominent southern Italian clerics and laymen, dedicating works to both Desiderius, the abbot of Monte Cassino, and Alfano, the archbishop of Salerno.³

With their support, Constantine embarked on a programme of translating a large number of medical texts from Arabic into Latin.⁴ Constantine's productions included translations of Arabic versions of authentically Galenic works,

2 We have, for example, three distinct sources of information for Constantine's life, including two accounts from Monte Cassino, one appearing to originate in twelfth-century Salerno, and a third from Córdoba. For basic orientations on Constantine's life, see Newton (1994) and Veit (2003a). Some scholars have supposed Constantine came from the Christian communities in North Africa, while others have supposed he was a convert from Islam; conclusive evidence for either position has yet to surface.

3 Constantine's dedications are discussed in Newton (2011). For more on Constantine's career, see Green (Chapter 17) in this volume.

4 For a recent discussion about the way that enthusiasm for Arabic culture may have influenced Constantine's patrons and his translations, see Newton (2011). It was long believed that Constantine knew and translated works from Greek as well; the modern consensus, however, is that he translated works exclusively from Arabic. His uncertainty about the meaning of

such as the *On Affected Parts* and Galen's commentary on the Hippocratic *Aphorisms*. In other cases, Constantine appears to have translated compressed Arabic summaries of authentically Galenic works, though these texts need further study: the precise Arabic source of Constantine's translation of a compressed version of Galen's *Therapeutic Method* awaits identification, while questions remain about the source and production of his *Isagoge*, a translation of an introductory overview of Galenic medicine that may have some connection to Galen's *Art of Medicine*. Even more puzzling is the wholesale disappearance of Constantine's translation of Galen's *On the Doctrines of Plato and Hippocrates*.

Most of Constantine's translations, however, derive from the long tradition of Galenic synthesis, including both large-scale synoptic works of medicine and more specialised treatises. This can be seen numerically: Constantine translated, at most, five works of Galen, but around fifteen synthetic works of Galenic medicine. Constantine's disproportionate engagement with compilatory works of Galenic medicine is also evident in the works produced for or dedicated to his most prominent patrons: Alfanus, archbishop of Salerno, was the dedicatee of Constantine's *De stomacho* (a translation of the *Kitāb al-Ma'ida* of Ibn al-Jazzār, d. c. 980), while Desiderius, the venerable abbot of Monte Cassino, was the recipient of Constantine's *Pantegni*, a work intended to serve as a comprehensive overview of the 'entire art' of medicine that was a translation of the medical encyclopedia of 'Alī ibn al-'Abbās al-Majūsī (d. 994).

In the preface to the *Theorica Pantegni*, the *Pantegni*'s ten books of medical theory, Constantine situates himself with respect to the medical tradition. He claims broad familiarity with the medical tradition, suggesting that he knew well both classical authorities and their 'modern' (here late antique) successors. His stance towards those classical authorities is surprisingly critical, however. Constantine's text explains that he had read the works of Hippocrates and Galen but been frustrated by their limitations, finding fault with the brevity and obscurity of Hippocrates' *Aphorisms* and the difficulty of working with Galen's numerous and prolix works. In this preface, Constantine thus displays his command of the foundational texts of the tradition and simultaneously emphasises his superiority to it.⁵

Greek words can be seen, for example, in the *Viaticum*'s uncertain use of Greek nosological terminology.

5 The best copy of the *Theorica Pantegni*, in our current state of knowledge, can be found in The Hague, Koninklijke Bibliotheek, MS 73 J 6, which is accessible online at <https://galerij.kb.nl/kb.html#/nl/liberpantegni/> (accessed 9 March 2018); its preface is found on fol. 1r.

In fact, Constantine's works benefited considerably from the assiduous efforts that Constantine's predecessors had made to refine and systematise Galenic medicine. In particular, despite his wholesale dependence on their works, Constantine entirely neglected to mention the Islamicate authors he had used, emphasising instead his access to large numbers of classical and late-antique medical works – in some cases even describing his efforts to meticulously scour classical texts to produce his works. Similarly, he names Greek inventors of particular remedies but not their Islamicate analogues.⁶ Constantine's dependence on Arabic texts appears to have been known to some extent even in his day; while much has been made of Constantine's personal culpability in these omissions, his explicit discussion of the alienation of intellectual labour in the *Viaticum*, his seven-book handbook of practical medicine, reveals a certain unease, and may indicate that the elision of Arabic authorities had been done at the instigation of Constantine's patrons.⁷

In contrast to these erasures, Galen figures prominently in these texts, and served a number of purposes: more than anyone else, he authorised the content of Constantine's texts, marking a shift from away from the practical bent of many earlier Latin medical texts.⁸ Galen was a font of theoretical claims and therapeutic interventions in Constantine's texts, while his case histories appear with frequency to validate a particular claim or course of action. Taken together with the prefaces of Constantine's works, these references reveal Galen's prestige in the eyes of Constantine and his patrons.⁹

But if Constantine's works drew upon the pre-eminence of Galen as a medical authority and, in their broad success, played a substantial role in the reestablishment of Galenic medicine in the Latin West, how was Galen and his voluminous output represented in Constantine's texts? What aspects of Galenic medicine were represented accurately in Constantine's translations? Were any aspects distorted? To answer these questions, we must briefly consider several aspects of Constantine's texts.

6 Jacquot has argued that Constantine was here attempting to spare his readers the impenetrable names of his sources; the manuscript transmission of Constantine's works makes clear, however, that the inclusion of less well-known Greek authorities was not particularly transparent to his readers. Cf. Jacquot (1994: 75).

7 For discussion of earlier accusations of plagiarism, and some efforts to rehabilitate Constantine, see Newton (2011).

8 The *Passionarius*, for example, a practical medical handbook compiled by Gariopontus, offered discussion of a wide range of illnesses, but with only the scantiest theoretical discussions. For further discussion of Constantine's theoretical influence, see Jacquot (1992); see Glaze (2008) for an introductory discussion of Gariopontus.

9 And as Green shows in Chapter 17 in this volume, it is likely to have been this prestige that established Galen as the central medical authority for the rest of the Middle Ages.

Most fundamentally, Constantine's works did much to shape medieval Latin Galenism by establishing a body of Latin Galenic terminology. Constantine did not single-handedly and heroically teach Latin *medici* how to speak intelligibly, as earlier scholars believed, but he did much to resolve the terminological confusion of his predecessors and gave substantially clearer expression to Galenic anatomy, physiology, and nosology.¹⁰ Constantine's works were not without their own obscurities, however; this is most apparent in his early, influential *Isagoge*, a brief work intended to introduce its readers to the rudiments of Galenic theory, but some terminological and conceptual uncertainty and inconsistency persists even in his mature works.¹¹

Occasional uncertainties aside, however, Constantine's works played a decisive role in establishing the terminological – and thus theoretical – parameters of medieval Latin Galenism. In Constantine's texts, Galenic theory was presented with much greater clarity and consistency than in earlier Latin texts. Where earlier, often practical works left the physiological underpinnings of various diseases unclear, Constantine's works described physiological function and the aetiology of various afflictions in detail. In particular, Constantine's works laid considerable stress on the humoral constitution of the body and its members, and explained the majority of illnesses in terms of humoral imbalance. Moreover, Constantine's works drew emphatic connections between natural philosophy and medicine; his *Pantegni*, for example, would become an important vector for Aristotelian natural philosophy in the Latin West, while Constantine's translation practices show a preference for theoretical discussion over practical advice, even in resolutely practical works like the *Viaticum*.¹²

Constantine's wide-ranging translations made a considerable amount of Galenic medicine available to the Latin West, and in several forms, from an extensive overview to Galenic theory (the theoretical half of the *Pantegni*), to a comprehensive handbook of practical medicine for lay readers (the *Viaticum*), to a number of specialised treatises. Constantine's translations were not perfect vessels for the transmission of Galenic medicine in its Islamicate form to the Latin West, however, and the flaws and limitations in Constantine's works would be corrected and ameliorated by succeeding generations. The peculiarities of Constantine's terminology were regularly glossed, as manuscripts of the *Isagoge* show, while the theoretical claims in Constantine's *Pantegni*

10 For further discussion of southern Italian terminology at or just before Constantine's day, see Glaze (2012).

11 Constantine displays an uncertainty about the Galenic disease category of break in continuity, for example, as can be seen in *Viaticum* 5.1. Veit has also noted the inconsistency of Constantine's terminology; cf. Veit (2003b: 168ff.).

12 For Constantine's influence, see, for example, Ronca (1994).

would undergo later debate and refinement. But despite their limitations, Constantine's translations succeeded in establishing a philosophically informed and theoretically sophisticated form of Galenic medicine in the Latin West, and occupied a central place in the study and practice of medicine in the long twelfth century.

2 Gerard of Cremona (d. 1187)

In the decades after his death, Constantine's translations spread with surprising rapidity. Constantine's translations were not warmly received in all places, however; it was only after the passage of several decades, in fact, that the translations Constantine produced at Monte Cassino began to influence medical writings produced down the road at Salerno. Even more strikingly, one of the medical translators from Arabic into Latin who succeeded Constantine, Stephen of Antioch (fl. 1127), reveals a quite personal sense of indignation about Constantine's translations and influence. In his preface to the *Liber regalis* (a more complete retranslation of Constantine's *Pantegni*), Stephen fulminates against Constantine. Where Constantine had stressed how much effort he put into compiling his works from classical sources, Stephen excoriates Constantine's dishonest omission of his Arabic sources, acidly describing him as a mere translator (*interpretem potius quam scriptorem*) whose 'hot-headed deceit' had not even produced a particularly valuable text.¹³

Stephen's retranslation of Constantine's *Pantegni* is not merely remarkable for its attacks on Constantine, however, but because it suggests Constantine's rigid division between classical and Islamicate authorities was crumbling. Where Constantine had omitted the names of Islamicate authorities from his translation, Stephen forthrightly insists on their open citation.¹⁴ The place of Galen and other classical authorities in the work shifts accordingly. As had been the case in Constantine's works, Galen continues to serve an authorising function, but these Arabic figures share the authoritative position of Galen and Hippocrates. More than this, Stephen's faithfulness to the Arabic text of ibn al-Majūsī means these Islamicate authorities sometimes even merit greater attention than their classical predecessors. The preface to book 1, for example, explains that while al-Rāzī had composed a comprehensive work of medicine (the *Continens*), its unclear organisation justifies the production of a new

13 For Stephen, see the fundamental work in Burnett (2009).

14 For Stephen's insistence on 'attributing to the author (*auctori*) what is his', see Burnett (2009: 28).

compendium of medicine. As had been the case in Constantine's *Pantegni*, Hippocrates and Galen come in for criticism as well, but Arabic authors like al-Rāzī are now the focus. Why the *Liber regalis* reveals greater openness to Islamicate authorities is unclear – after all, Constantine's southern Italian context was a cultural crossroads, much like Stephen's Antioch – and the limited circulation of Stephen's work meant that Constantine's 'pseudo-classical' tendencies would remain entrenched.¹⁵ It appears to have only been with the eventual adoption of the works of Gerard of Cremona that Islamicate authorities became widely accepted, and Gerard's career helps us to see the circumstances of this shift with particular clarity.

Gerard, who appears to have been active as a translator from the 1150s until his death in 1187, travelled to Iberia because of his interest in astronomy and astrology. The *Commemoratio librorum* produced by his colleagues explains that, having been brought up in the lap of philosophy, Gerard was originally drawn to Toledo by the pursuit of Ptolemy's *Almagest*.¹⁶ But although Gerard had originally been drawn to Toledo by Greek astronomy, he chose to enrich the Latin West more generally, with what his students called the 'most beautiful flowers' from the 'green meadows' of Arabic works. Like Stephen's *Liber Regalis*, we can see here that Arabic writers were coming to occupy a place alongside classical authorities: the *Commemoratio* quotes Aḥmad ibn Yūsuf (*Hametus*) (tenth century) alongside Ptolemy, for example. In this book list, classical authorities are usually listed first, but then followed by Arabic writers and commentators; Aristotle and Themistios head the list of works on dialectic, but are joined by al-Fārābī.

The prominence of medicine in Gerard's efforts is apparent in this list, which rivals Constantine's output in scale and ambition, and included both specialised works and more general treatises, works narrowly focused on medical treatment and works that applied philosophy to medicine. Gerard translated about ten works by Galen on a variety of subjects, including *On Mixtures*, *On the Capacities of Simple Drugs*,¹⁷ and two of Galen's commentaries on Hippocrates (*On Acute Diseases* and *Prognostic*). As is suggested by the translation of these commentaries, Gerard's translations reveal attention to the nuances of Galenic theory, but they also evince an interest in the realities of practice: he also

15 For 'pseudo-classical' terminology in Constantine's *Pantegni*, see Strohmaier (1994).

16 The biographical notice his students wrote has recently been edited in Burnett (2001). Daniel of Morley's *Philosophia* also corroborates this interest, which is discussed in Burnett (1995).

17 On the reception of *On the Capacities of Simple Drugs*, see Ventura (Chapter 21) in this volume.

translated two of Galen's works on crises (*On Crises* and *On Critical Days*) and Galen's substantial *On the Capacities of Simple Drugs*.

But these considerable additions to the Galenic corpus in Latin were accompanied or even framed by Gerard's translations of Arabic works of Galenic medicine. The mediating function these translations often had is most apparent in the *Commentum Haly*, Gerard's translation of 'Alī ibn Riḍwān's commentary on Galen's *Art of Medicine*, but it may also be detected in his translation of Ishāq ibn Sulaymān al-Isra'īlī's (d. c. 932) work on the elements alongside Galen's *On Elements*. The most substantial example of this, however, is also the text that would prove the most influential: Gerard's translation of Avicenna's *Canon*, like Constantine's *Pantegni*, provided another large-scale theoretical overview of Galenic medicine. But where Constantine's text had simply described Galenic medicine and some of its natural philosophical underpinnings to its readers, the *Canon* critiqued Galen's philosophical pretensions and disputed his therapeutic suggestions.¹⁸ It was Gerard's translation of the *Canon*, therefore, that provided a theoretical and philosophical richness that would heavily inform the Latin scholastic medical tradition.

But the similarity between Gerard and Constantine's efforts to provide Latin medicine with a substantial amount of Galenic theory may not be entirely adventitious; Gerard's translation program was deeply consonant with – and may even have been influenced by – Constantine the African's example. For one, as Monica Green has noted, Gerard's medical translations complement those produced by Constantine, with only a handful of overlapping works that both Gerard and Constantine translated. For example, Constantine translated only a single text from the Alexandrian curriculum of Galenic works (his abbreviated version of the *Therapeutic Method*), but listed the full sixteen in his *Pantegni*; from this list, Gerard translated a further five texts into Latin.¹⁹

Although there may be a broad consonance between the translations of Gerard and Constantine, Gerard presents some striking contrasts with Constantine. Clarity of presentation appears to have been one of the paramount concerns of Constantine's translations, and his works were written in comprehensible Latin, with occasional touches of Latin style. By contrast – although the difference is not absolute – Gerard's translations hewed closely to the Arabic language of his sources, with dense syntax and sometimes tangled argumentation. Where Constantine might simplify the content of his sources for Latin readers, Gerard's works presented the content of his sources in meticulous detail, presenting both the content – and even the verbal texture – of

18 On Galen and Avicenna, see Strohmaier (Chapter 11) in this volume.

19 For further discussion of this consonance, see Green (Chapter 17) in this volume.

his sources to his readers: instead of translating Arabic phrases into idiomatic Latin, he simply replicated them in Latin with phrases like 'quod est quia'. In matters of terminology, Constantine had done much to simplify and systematise pre-existing Latin medical language, with only occasional use of novel Greek and Arabic loan words. Gerard's terminology was heavily indebted to Constantine's, but he did not hesitate to introduce Arabic loan words that might be new and unfamiliar to his Latin readers: instead of a Latin term for excessive sweating, for example, Gerard's text used the transliterated Arabic term *alasaph*. This terminology was so unfamiliar, in fact, that a number of Gerard's translations soon circulated with lists of synonymous words that clarified Gerard's obscure language to his readers.²⁰ Despite these difficulties, however, Gerard's translations would become central to medieval medicine: that Gerard's translations were furnished with these lists of synonymous words suggests both their broad readership as well as their occasional obscurity. Gerard's translations became so ubiquitous, in fact, that their Arabic style may have become the standard register of authoritative medical texts; translations from Greek that lacked this style, for example, may have been less readily accepted.²¹

In medicine as in many fields, then, Gerard is one of the most visible Toledan translators in the second half of the twelfth century, and thus necessarily looms large in our understanding of the translations of the long twelfth century. However, recent scholarship has seen a considerable revision of our picture of these Toledan translators. For one, Toledo did not begin as the dominant centre of twelfth-century Iberian translation: in the first half of the century, French clerics in Toledo appear to have had little interest in science and medicine, and Toledo saw less translation activity than other sites in the peninsula.²² It was only around mid-century that a constellation of factors conspired to give Toledo a dominant role in the Iberian Peninsula, and a real importance in the intellectual landscape of the Latin West. First, Toledo possessed a substantial number of Arabic-speakers: some, perhaps, who fled the puritanical Almohad regime to the south, while others had stayed on after the Latin conquest in 1085.²³ Second, Toledo clearly had ample bibliographical resources, and these allowed the Latins to augment their knowledge of the

20 For more on Gerard's translation practices, see now McVaugh (2009).

21 For this suggestion, cf. Nutton (2011: 27).

22 For the lack of interest of early Cluniac clerics, cf. Burnett (2001: 250); for the importance of other translation sites, see, e.g., Burnett (1992).

23 For more on the background of these Arabic speakers, cf. the deft summary by Burman (2012: 92–3).

liberal arts.²⁴ Finally, and perhaps most importantly, institutional patronage in Toledo at this point allowed for the production of a large number of translations. From the mid twelfth century, we begin to see the cathedral canons of Toledo undertaking substantial numbers of translations from Arabic into Latin, with strong financial support from the archbishops of Toledo. This was likely not a 'school' in any real sense, but it was nevertheless a strong, lasting, cooperative effort between the clerics of Toledo.²⁵ Some measure of the financial support given to these translators can be seen, for example, in the fact that many of these translations appear to have been undertaken by pairs of translators working in tandem, with one contributor translating from Arabic into the vernacular, and a second working to render the vernacular into Latin.²⁶ Such a sustained, well-financed effort, taken together with its close connections to the cathedral of Toledo, suggests that part of the impetus for the translations in Toledo may have been ideological, an expression of a desire to rival Andalusī Muslim culture.²⁷ This milieu gave rise to Gerard and the extensive series of medical works he translated.

But why medicine? Why should the confluence of Gerard and Toledo have resulted in an extensive effort to translate large numbers of medical works into Latin? The answer is not immediately obvious. Gerard had been raised 'in the lap of philosophy', but we have little evidence that he had any medical background. Likewise, our sources speak unequivocally of Gerard's enthusiasm for the science of the stars, but give no comparable evidence for medical enthusiasms. Medicine, after all, had not traditionally been part of Latin education in the liberal arts. Can we detect here the influence of Islamicate culture, where many of the greatest thinkers had been physicians? Or might we detect the persistent influence of an earlier Iberian cleric, Isidore of Seville, whose fourth book of *Etymologies* concludes with a discussion of medicine as a kind of second philosophy? Either way, we do well to attend to the distinctive place that medicine – and Galen himself – had attained in the course of the twelfth century. In the first half of the twelfth century, after all, medical texts proved to be an important source of philosophical knowledge, and Aristotelian natural philosophy in particular.²⁸ It may even have been the case that clerics in the Latin West had become increasingly medicalised in the course of the long

24 Gutas has succinctly pointed out the distinctively Andalusī quality of the books that were available, in Gutas (2006: 6ff.).

25 For a discussion of the 'school' of Toledo, see Burnett (1992).

26 The classic discussion of these issues can be found in d'Alverny (1989); further discussion can be found in Burnett (1995).

27 For discussion of the ideological significance of Iberian translation, see Gutas (2006).

28 For this, see Jacquot (1988).

twelfth century: medical manuscripts circulated in extremely large numbers in monasteries and cathedrals, and medical influences appear to have spread widely; hagiographical works by William of Canterbury (fl. 1172–1176/7) and Reginald of Durham (fl. early 1160s–after 1170), for example, described miracles with technical medical language and details.²⁹ We can even detect Galen's growing importance for Gerard and his circle. When his *socii* listed the medical works Gerard had translated, Galen's works took pride of place, before works of Arabic medicine, and even before the single (pseudo-)Hippocratic work Gerard translated. Gerard's *socii* even justified their production of a commemorative work with a list of Gerard's translations by appealing to Galenic precedent. Like Constantine the African, therefore, Gerard and his followers appear to have been deeply invested in the prestige of Galenic medicine, and this likely played a substantial role in ensuring the centrality of medicine among Gerard's translations.

The centrality of Galenic medicine among Gerard and his colleagues was no uncritical reverence, however, and we may also detect that attitudes to Galen had changed in the course of the century. In the works of Constantine, after all, Galen had almost exclusively served an authorising function, providing authoritative pronouncements, offering additional insights, and providing clinical examples. Gerard's translations remained strongly indebted to Galen, but the works he translated more clearly distinguish themselves from Galen himself. Avicenna's *Canon*, in particular, occasionally critiques Galen; this can be seen in the case of break in continuity, where Avicenna disagreed with Galen's claims that certain kinds of break in continuity were untreatable, but also in a more general scepticism of Galen's philosophical pretensions.³⁰ These attitudes obviously stemmed from Gerard's source texts, but their preservation and circulation in Gerard's translations suggests a growing willingness to view Galen's claims critically.

3 Mark of Toledo (fl. 1193–1216)

Despite Gerard of Cremona's extensive additions to the medieval medical corpus, a surprising caesura exists between the production of his works and their incorporation into classrooms and libraries, even though they would eventually assume a dominant role.³¹ Likewise, we have limited evidence that

29 For the medicalisation of miracles and hagiography, cf. Koopmans (2011: 181ff.).

30 For this, cf. Avicenna, *Canon*, 4.4 ed. (1507) fols 393r ff.

31 For this gap, cf. McVaugh (2010: 309ff.).

allows us to see connections between Gerard's activities and the educational institutions that were developing rapidly in his lifetime. The *Commemoratio librorum* produced by Gerard's students, for example, speaks in frustratingly vague terms about Gerard's connection with contemporary educational institutions, while Daniel of Morley's account of an astrological debate with Gerard gives little reliable evidence about actual instruction, even though it has often been taken to imply the existence of a school in Toledo. By contrast, Mark of Toledo, a scholar and translator of the next generation, gives us unambiguous evidence for connections between Toledo and the rapidly developing world of education; in this and other respects, Mark of Toledo presents an interesting comparison with the translators who preceded him.

From an Arabic-speaking Mozarab family, Mark produced a wider range of texts than merely medical translations: at the urging of Rodrigo Jiménez de Rada, archbishop of Toledo, Mark turned his knowledge of Arabic to the translation of the Qur'ān and the translation of several writings by the Almohad leader Ibn Tūmart.³² Much of what we know about his career as a translator of Galen is given at the beginning of his translation of Galen's *On the Pulse for Beginners*.³³ According to this text, Mark was involved in studying medicine (possibly at Montpellier) when he was urged by the scholars and regent masters there (*magistri illic regentes et scolares*) to use his knowledge of Arabic to render Galenic works into Latin.³⁴ He therefore turned first to improving Constantine's translation of the *Isagoge*, and then undertook the translation of three of Galen's works: *On the Pulse for Beginners*, *On the Function of the Pulse*, and *On Problematical Movements*. In contrast to Stephen of Antioch, these translations were motivated less by affront and more by a desire to produce useful texts for teachers and students of medicine. Mark's piety receives considerable emphasis in this preface: it was with the Lord's assistance that Mark retranslated the *Isagoge*. Similarly, it was just as the Gospel suggests, Mark explains, that he had 'sought and found' texts by Galen that he translated, quoting Matthew 7:7 *in extenso*. Mark pointedly says that, 'having invoked the name of God', he took up his pen to translate from Arabic into Latin. Biblical allusions in prefaces to translations were no novelty – Constantine had, after all, included several in the preface to his *Viaticum* – but Mark lays it on thicker than earlier translators.³⁵ This religious emphasis presages his later involvement with

32 For Mark's career as a translator of religious texts, see Burman (2007).

33 The text of this preface can be found in d'Alverny and Vajda (1951: 259–60).

34 For the location of Mark's studies, cf. Nutton (2011: 28).

35 In Mark's preface, he explains the process of seeking out new medical works to translate with a direct quotation from Luke 11:9: 'Then, after this, I zealously sought a work to

Archbishop Rodrigo, but it may also suggest that, as Arabic-Latin translations became more widely influential and theologians worried about the theological dangers of Islam, engagement with Arabic texts still occasioned some residual anxiety for Christian translators.

This preface also reveals the persistence of Arabic-Latin translations in medical learning and education at the turn of the century. After being implored to translate something by Galen into Latin, Mark's first translation was, in fact, a 'more perfect' and 'more useful' version of the *Isagoge*. This decision implies that Constantine's earlier translation was imperfect and difficult to use, limitations that must have become apparent in the increasingly established, regularised, and rigorous educational institutions of Mark's day. At the same time, his decision to retranslate the *Isagoge* underscores Constantine's role in shaping the reception of Galen, even after Gerard's translations, which Mark neglects to mention. We may surmise that the masters and scholars Mark mentions were keenly interested in Galen, but also saw value in the Arabic interpretations and renditions of Galen's works. And for much of the thirteenth century, even as fewer Arabic-Latin translations were produced, Arabic authorities and Arabic-Latin translations remained firmly rooted on the curricula and reading lists of the Latin West, valued interlocutors in the demanding task of interpreting and assessing Galenic medicine.³⁶ Avicenna even persisted as a medical authority into the sixteenth century, while the stylistic peculiarities of Arabic-Latin translations may have even become normative for medical readers.³⁷

By the end of the century, this established place appears to have created at least some demand for further Arabic-Latin translations, when a spate was produced. Substantial medical compendia such as the *Continens* of al-Rāzī were translated in their entirety, the *Tacuinum sanitatis* of Ibn Buṭlān would enjoy sustained popularity as a synoptic handbook of regimen (sometimes in very lavish manuscripts), and the *Colliget* of Averroes offered a strongly Aristotelian perspective on discrepancies between Galen and Aristotle in physiological and medical questions.³⁸ These translations attest to the continued acceptance of and interest in Arabic authorities in their own right, not merely as vessels for the transmission of knowledge from Galen. The central shifts of the long twelfth century, therefore, had sent down deep roots: medicine had become substantially more philosophically and theoretically sophisticated, and had

translate in the libraries of the Arabs, according to [the words of] that Gospel, "Seek and you will find, knock and the door will be opened to you".

36 For more on this, cf. McVaugh (Chapter 20) in this volume.

37 For the long persistence of Avicenna, see Siraisi (1987). For the suggestion that Arabic-Latin style had become the norm, see Nutton in Bos and Nutton (2011: 27).

38 For some introductory discussion of these translations, see Jacquart and Micheau (1990).

done so with the help of Islamicate authorities who had their own place at the table alongside the medical authorities of classical antiquity.

4 Conclusion

But why *did* the Arabic-Latin medical translations of the high Middle Ages become so deeply entrenched in the Latin West? Among the translators from the long twelfth century who first introduced Arabic-Latin translations to the Latin West, it was clearly Galen's prestige and authority that was paramount.³⁹ It was to Galen, not Avicenna, that Gerard of Cremona's colleagues compared him when memorialising his life; and it was the works of Galen that Mark of Toledo's masters and colleagues entreated him to supply them with. Why, especially in a period of interconfessional tension and increasing – and increasingly anxious – preoccupation with bodies, should medical practitioners, educators, and readers have turned with such avidity to Arabic-Latin translations? Both Gerard and Mark, perhaps, suggest the way that Islamicate sources had become imbricated in the reception of classical authorities: the *Commemoratio* of Gerard openly quotes and lists Islamicate writers alongside its appeals to Galen, suggesting that the claims of Galen were no longer the final word in questions of medical theory and practice. Tellingly, it was Avicenna's *Canon* that became one of the central texts of medical instruction, where Galen's claims were discussed extensively and even, in some cases, refuted. Despite all of his elisions of his Arabic sources, then, we may wonder: was it the translations of Constantine the African, with their hints of exotic knowledge and their eager, widespread reception by readers such as Henry of Huntingdon that played a decisive role in reshaping and broadening the canon of Latin medicine in the long twelfth century?

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39 For the broader context of this development, see Green (Chapter 17) in this volume.

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Translating Galen in the Medieval West: the Greek-Latin Translations

Anna Maria Urso

1 Medieval Translations of Galen: an Overview

1.1 *From Late Antiquity to the Twelfth-Century Renewal*

As Owsei Temkin writes in a study that remains a milestone in the story of Galen criticism, ‘the centrifugal forces that tended to separate the Roman Empire into Latin West and Greek East gave Galen to the East’, in particular to Alexandria.¹ Here – between the era of Oribasios (later third/early fourth century) and the Arab conquest of the city (642), in a cultural milieu dominated by Neoplatonism impregnated with Aristotelian logic and natural philosophy – a selection of Galen’s works was for the first time used as the foundation for a medical training *curriculum*.² This was the first step in the cultural process of acquisition, organisation, and interpretation of the thinking of the master from Pergamum, known as Galenism, which would be further developed in Syria and the Islamic world, but would only take root in the West at the height of the Middle Ages. The first traces are to be found in Ostrogoth and/or Byzantine Ravenna, where evidence of interest in Galen appears in a corpus of Latin commentaries whose selection of texts seems to reproduce the foundation course in Alexandria.³ Apart from these commentaries, however, and a fully preserved translation of the *On Sects for Beginners*, the West in Late Antiquity and the early Middle Ages did not leave evidence of interest in the theories of Galen. We can merely suppose that there were translations of the *Art of Medicine* and *On the Pulse for Beginners*, of which commentaries survive,⁴ while in the other surviving translation of the *Therapeutics to Glaucon* the Greek text seems

1 Temkin (1973: 59).

2 On the Galenic syllabus as it existed in sixth-century Alexandria (later called ‘The Sixteen Books’, but consisting in fact of twenty-four treatises, some considered as parts of larger works) see Garofalo (2003: 203–8).

3 An annotated bibliography on Alexandrian Galenism and its Western spread during the sixth and seventh centuries, from the basic Augusto Beccaria’s researches to 2000, is to be found in Palmieri (2002).

4 Fischer (2012: 694–5).

to have been significantly reshaped.⁵ Rather, translations of pseudo-Galenic works have been preserved. In their highly practical approach, they are comparable to most medical texts prior to the *Schola Medica Salernitana*, mainly concerned with remedies and treatment.⁶

In order for Galen's thinking, in both its practical and theoretical aspects, to take hold in the West, and there to 'constitute the basis of formal medicine ... at least until the seventeenth-century' Scientific Revolution,⁷ a cultural renewal was needed, which brought with it the awareness of shortcomings in the scientific education of the time and the need for new texts to fill the gap. The translation movement that brought Galen's theories to the West, along with those of other fields of science (or pseudo-science) such as philosophy, mathematics, and astrology, was how the need for cultural tools was satisfied in a Middle Ages above all dominated by Latin. This movement, which proceeded uninterrupted albeit in isolated and circumscribed episodes, first emerged in central-southern Italy in the eleventh century, gained energy in the twelfth century, and then continued until the threshold of the Renaissance.⁸

As far as medicine is concerned, the movement is commonly deemed to have been started by two forerunners linked in different ways to Montecassino: Alfano, a monk at the abbey and later Archbishop of Salerno, and Constantine the African (d. before 1098/99), a Carthaginian monk who had settled in the Benedictine monastery and whose life is surrounded by legend.⁹ The former translated directly from the Greek *Latinorum cogente penuria* the *On Human Nature* of Nemesios of Emesa,¹⁰ a patristic work that assimilates philosophical doctrine and elements of Galenic physiology. The latter provided the West with its first corpus of medical texts, translating both works originally written

5 Fischer (2012), however, argues that in a number of cases the Latin translation may preserve the most authentic version. As Fischer (2013: 676) stresses, the *Therapeutics to Glaucon* was 'the most important Galenic work for the Middle ages ... at least until the second half of 12th century'.

6 On the Latin translations of Galenic and pseudo-Galenic works during the early Middle Ages see the updated overview by Fischer (2013). A summary of the medical production in its whole before Salerno is to be found in Jacquart (1990: 251–5).

7 Nutton (2008: 355).

8 A synthetic but complete picture of this translation movement in its whole is to be found in Chiesa (1995). For an exhaustive and updated bibliography on the medieval Galenic translations, particularly the Greek-Latin ones, from the relevant pioneering contribution by Haskins up to now, I refer to the *Fiche thématique* of my disciple Alessandra Scimone (2017).

9 On Constantine the African as a translator, see Long (Chapter 18) in this volume.

10 Alfano, *Premnon*, pr., ed. Burkhard (1917) 2.23–4. As d'Alverny (1982: 426) argues, the reference to the penury of Latins is 'a topical formula of many translators'.

in Arabic and pre-existing Arabic translations of Greek originals, including Galen. Later translators, who preferred Galen among all the authors on account of the very theoretical complexity that had relegated him to a marginal position in Late Antiquity, mostly chose to base their translations directly on his thinking rather than on the re-workings he had undergone in Arabic texts.¹¹ They however on some occasions drew directly on Galen, relaunching with Alfano the path of Greek – late antique Latin translation. On other occasions, according to the new approach initiated by Constantine, through Arabic, translating texts already translated in Baghdad in the ninth century, often via Syriac, at the school of Ḥunayn ibn Ishāq.

1.2 *Translation Method and Styles*

Medical texts in Late Antiquity were translated both *ad sensum*, according to the usual methods of Latin *vertere* theorised by Cicero in his *On the Orator*, by changing, adding to, and subtracting from the original text, and *ad verbum*, according to the *fidus interpres* method stigmatised in Horace's *The Art of Poetry*. This method, theorised by Jerome for the sacred writings *ubi et verborum ordo mysterium est* ('where even the order of the words is a mystery', *Ep.* 57.5.2) but which he himself ruled out for other translations in order to avoid *ridiculum* and *absurdum* (*Ep.* 57.5.7–8), between the fifth and sixth centuries had been extended to scientific texts by Boethius, in order to keep the author's true thinking unchanged. Even afterwards, however, he continued to receive competition from the *ad sensum* method.¹² It is possible that Burgundio of Pisa exerted his influence on the affirmation of the *verbum de verbo* method, since he adopted it with programmatic awareness and defended it as an *iter difficilium* in the extensive preface to the translation of the *Homilies* of John Chrysostom on John's Gospel (1174), rightly defined by Charles Burnett as 'virtually a blueprint for literal translation and an account of the history of its practice'.¹³ In any case, it appears to be used generally in subsequent medical translations from Greek, to the extent that in the fourteenth century the prefatory statements by Niccolò of Reggio of wanting to translate *fideliter, nihil addens, minuens vel permutans*, in exact antithesis with the Cicero trinomial, sound like formulaic expressions of concepts already acquired.¹⁴ Homogeneity of *method* does not mean homogeneity of *application*. Although in a context of rigid literalism,

11 Burnett (2011: 348–9).

12 A detailed study on the theoretical debate on translation between late antiquity and the Middle Ages is to be found in Chiesa (1987); see also Burnett (1997; 2011: 360–3).

13 Burnett (2011: 361–2). The text of this preface is published in Classen (1974: 79–102).

14 See the texts published in Lo Parco (1913: 291–2, 295).

in which translators aim to render even the particles *men* and *de*, a patient linguistic analysis can show: the specificity and fixedness of the lexical correspondences of each translator; Greek vs. Latin vocabulary; newly coined words; the preference for some words compared to others; the peculiarity of some renderings and, if it is the case, of syntactic transpositions. At the same time, we can highlight the theoretical knowledge and linguistic skills of the individual translators and the compromises they adopted to meet the needs of faithfulness to the source text with those of comprehensibility. In short, everything we mean when we talk about translation style. These peculiarities are even more apparent when we compare the choices of different translators individually and their systems of correspondences as a whole.

1.3 Reception and Impact

The natural use of translations from Greek and Arabic was within the *scho-lae* and, starting in the thirteenth century, in the fledgling universities, where they became the basis of medical education.¹⁵ At first, the curricular textbook canon corresponded to the original one of the so-called *Articella*, an anthology of Greek-Latin and Arabic-Latin translations compiled, as it now seems, at Monte Cassino in the final quarter of the eleventh century and employed for teaching purposes since the twelfth century onwards by the teachers of the Salerno School. Part of this collection from its inception (as it now seems) was the anonymous (and incomplete) Greek-Latin translation of Galen's *Art of Medicine*, which is not attributable to any of the known translators on the basis of current knowledge, even though its translation style and vocabulary have been studied. The original core (commonly called *Ars medicine*) was joined from the thirteenth century by the first commentaries and this new version, commonly known under the title of *Ars commentata*, by other texts.¹⁶

15 On Galen's early reception in the West (eleventh–twelfth century), see Green (Chapter 17) in this volume. On Galen in the medieval Universities, see McVaugh (Chapter 20) in this volume.

16 On the so-called *Translatio antiqua* of the *Art of Medicine* – known in the Middle Ages also as *Ars parva*, *Tegni*, or *Microtegni* and executed from a Greek exemplar, as demonstrated by Durling (1968) – I refer particularly to Fortuna and Urso (2010), with a thorough analysis of the translator's style and indications about the Greek model and chronology; see also Palmieri (2011). The collection known under the title *Articella*, in addition to *Tegni* included from its inception: the *Isagoge Johannitii*, a shortened version of Ḥunayn ibn Ishāq's *Questions on Medicine* by Constantine the African; two Greek-Latin translations of short treatises regarding pulse (by Philaretos) and urines (by Theophrilos); the anonymous Greek-Latin translation of Hippocrates' *Aphorisms*; the Arabic-Latin translations by Constantine of the Hippocratic *Prognostic*, and also – this is what we now know – the translation of the Hippocratic *Regimen in Acute Diseases* translated from the Arabic by Constantine as well. For this new contribution on the composition of the *Articella* and

However, in the last third of the thirteenth century a wave of 35 new translations already available in the previous century, which Luis García Ballester collectively called ‘the new Galen’, reached the important centres of Bologna, Paris, and Montpellier, thus expanding this original core.¹⁷

The total number of texts included in the *curricula* remained limited compared to the overall number of translations,¹⁸ further augmented later, in particular by the prolific activity carried out in the first half of the fourteenth century by Niccolò of Reggio. The preference, moreover, usually went to translations from Arabic: at first, perhaps, due to the prestige of Toledo, that fifty years after its recapture by the Christians had become a translation centre without equal in the Middle Ages; subsequently, due to the familiarity in the meantime acquired by professionals with the Latin technical vocabulary they adopted.¹⁹ Translations from Arabic, moreover, even if produced *verbum de verbo*, such as in the most widely read texts, by Gerard of Cremona, seemed clearer than those directly performed on Greek models, due to the intermediary language itself.²⁰ Beyond its presence in university *curricula*, however, the consequences of this production as a whole are crucial to the very development of Western medicine. In addition to introducing a larger and more precise technical vocabulary, the new Galen stimulated the production of new texts, exegetical of the sources or originals,²¹ pushing scholars to ‘rethink their principles of diagnosis and therapy’.²² Medieval translations, moreover, continued to convey Galen’s thinking in printed books, from the incunabulum of Galen’s *Opera omnia* by Diomedes Bonardo (Venice 1490) until the beginning of the Renaissance, before the more elegant humanistic translations took root and before the publication, in 1525, of the Greek *editio princeps* for the types of Aldo Manuzio.²³

As was already the case in Alexandria, also in the West in the Middle Ages the parallel spread of philosophy played a crucial role in the assimilation and exegesis of Galen’s thinking, in particular Aristotelian logic and physics, which, already well documented in Salerno, dominated the Arts curriculum with which all students started their academic careers. The link between

the other just mentioned in the text, see Green (Chapter 17) in this volume. A recent collection of studies on the *Articella* is in Palmieri (2016).

17 García-Ballester (1998).

18 García-Ballester (1998: 68).

19 See Burnett (2011: 362) and below, n.91.

20 See Burnett (1997: 60, 69). In the case of Galenic translations, moreover, the intermediary texts, the Greek – Arabic versions by Hunayn and his school, were executed *ad sensum*.

21 Siraisi (1999: 70).

22 Nutton (2008: 366), with examples.

23 On the first Latin editions of Galen’s *Opera omnia*, from 1490 to 1533, see Fortuna (2005; Chapter 22 this volume).

Aristotelian philosophy and Galenic medicine, moreover, is also visible in some historical circumstances: for example, in the fact that in the twelfth century physicians were ‘among the pioneers in introducing Aristotelian ideas into Western Europe’ and that some translators of Galen also translated Aristotle and vice versa.²⁴

2 Translators and Translations from Greek

2.1 *The Twelfth Century: Burgundio of Pisa, doctor doctorum*²⁵

Most of the original medical literature produced in the Middle Ages was the work of university professors. However, the translators were not, all or mainly, school or university teachers. Burgundio of Pisa (c. 1110–93), the first translator from Greek of Galen in the twelfth century, is an example of this. *Iudex, notarius, advocatus*, ambassador of Pisa in Ragusa (1169) and Constantinople (1136 and 1171), he was also a versatile and prolific translator in the time remaining from his other occupations. In addition to Galen, he in fact translated the *graeca* of Justinian's *Digest*, some patristic texts, and – according to discoveries made only in the 1990s – works by Aristotle: *On Generation and Corruption* and *Nicomachean Ethics*.²⁶ The translations from Aristotle, cited by Bartholomew of Salerno,²⁷ are indicative of Burgundio's relations with the Salernitan School. Other testimonies also remain of this link: on the commission of Bartholomew, Burgundio translated the final catalogue of the *Art of Medicine* before the middle of the century, thus completing a translation praised by himself because it had been produced *mirabiliter de verbo ad verbum*.²⁸ It is possible, moreover, that the translations of the fourth book of the commentary to the *On Regimen in Acute Diseases* of Hippocrates, recently attributed to Burgundio,²⁹ and of the commentary to *Aphorisms* 1–4.59³⁰ were carried out on commission of

24 Siraisi (1990: 66). As Siraisi (1990: 60) emphasises: ‘The full assimilation of Aristotelian logic and natural philosophy ... is the central fact of the intellectual history of western Europe in the thirteenth century’.

25 See the inscription on Burgundio's tombstone, v. 12, published in Classen (1974: 8), a work which still today is fundamental especially for Burgundio's biography.

26 On these attributions see Durling (1993: 98–9; 1994); Vuillemin-Diem and Rashed (1997).

27 See Jacquot (1988: 417–24), who pointed it out for the first time.

28 See the *prologus* to the translation of *Homiliae in Iohannem* in Classen (1974: 92–3). On the translation of this catalogue see Fortuna in Fortuna and Urso (2010: 139–41).

29 See Urso in Fortuna and Urso (2009: 149–71).

30 A confirmation of the attribution of the first part to Burgundio, according to Vindobonensis lat. 2328 (*contra* Vaticanus lat. 2369, which ascribes the whole translation to Niccolò), is to be found in Urso (2011).

Bartholomew, since they reflect the interests of the Salerno School. Like the other translators of Greek, Burgundio does not belong to any specific 'school' or centre. Despite the relationship with Salerno and the notables of the time, to whom some translations are dedicated,³¹ his activity was carried out independently against the backdrop of the increased contacts between the West and the Greek empire related to the founding of Italian trading colonies in the East. His travels gave him the opportunity to further his knowledge of Greek and obtain the books he then took back to Italy to translate.³²

The manuscripts of Burgundio are known to us thanks to a fortunate palaeographic discovery made in the 1980s by Nigel Wilson. They consist of a group of anonymous working *codices* produced at reduced cost in the *scriptorium* of the Greek Ioannikios, a copyist whose activity can be dated back to the first half of the twelfth century precisely thanks to his relationship with Burgundio. Burgundio adds notes to some of the works contained in these manuscripts, and it is precisely the identification of the Latin hand of the *marginalia* that made it possible to backdate the *codices* and the very activity of Ioannikios, whose chronology (as well as localisation) was previously uncertain.³³ To the exclusion of the Parisinus gr. 1849, the other manuscripts are all kept in Florence at the Laurentian Library,³⁴ where it was assumed that they arrived in a single batch in 1406, following the agreement that ended the siege of Pisa by the Florentines.³⁵ However, Burgundio must have had other manuscripts by Galen (for example Parisinus gr. 2665 and other *codices* lost to us), on which some translations seem to depend.³⁶

31 They are Pope Eugene III (*Homiliae in Matthaëum* by John Chrysostom and, after his death, *An Exposition of the Orthodox Faith* by John of Damascus); Emperor Frederick Barbarossa (*De natura hominis* by Nemesios of Emesa); King Henry, doubtless the future Henry VI of Hohenstaufen (*De sectis* by Galen).

32 Burgundio himself says to have got in Constantinople the *Homiliae in Iohannem*; see Classen (1974: 84–5).

33 See particularly Wilson (1983; 1986; 1987: 53–5; 1991). An updated discussion about these manuscripts and the links between Ioannikios and Burgundio is to be found in Degni (2013); see Degni (2013: 798–9) for the localisation at Constantinople of the activity of Ioannikios.

34 They are: Laurentianus plut. 74.5; 74.18; 74.22; 74.25; 74.30, already pointed out by Wilson, with the addition of Laurentianus plut. 75.5, in which Burgundio's hand has been recognised by Stefania Fortuna; see Fortuna and Urso (2009: 144), where new notes by Burgundio are added to the already known ones. Galen's works annotated by Burgundio, however, have not necessarily been translated by him, and vice versa; an overview is to be found in Fortuna and Urso (2009: 141–7).

35 Murano (2013: 55), but according to Stefania Fortuna, one of Burgundio's *Laurentiani* could have been used by Stephen of Messina in the thirteenth century; see below.

36 See Fortuna and Urso (2009: 146; 2010: 141); Gundert (2009: 97–102; 2013: 890).

Burgundio's handwritten notes contribute to our knowledge of his working method, even if for this purpose the contribution of the Latin tradition is more important, since it retains exegetical notes of various kinds attributable to the translator and, above all, a large number of double translations, of great interest in highlighting the translator's uncertainties and the ways in which his vocabulary developed.³⁷ The discovery of Burgundio's manuscripts, instead, turned out to be important in particular to better determine the corpus of his writings in the case of anonymous translations, not only because the common errors and features shared by these manuscripts and the Latin translations made it possible to identify them with certainty as models,³⁸ but also because of the contribution that the comparison between models and translations made to the knowledge of his translation style. Thanks to such comparisons – made according to the criteria already applied to the Latin Aristotelian corpus since the end of the Second World War – Burgundio's style is now better known than others, and constitutes a useful resource for assessing paternity in cases of anonymous translations (or those on whose paternity manuscripts do not agree), even in the absence of further clues. Nowadays, the overall Greek-Latin equivalences of particles is known, and was first dealt with by Richard Durling following in the footsteps of Lorenzo Minio Paluella, who had already highlighted their importance in investigating the paternity of the anonymous translations of Aristotle.³⁹ By extending the studies to the entire vocabulary of the translator, we now know other distinctive renderings of Burgundio (for example, the 'unexpected' one of *teleōs* with *finaliter*⁴⁰ or of *akribōs* with the superlative *certissime*),⁴¹ as well as some of his 'favourite words'⁴² and some general orientations, such as the search for fixed patterns of equivalence, even to the detriment of coherence with the context of the chosen term,⁴³ or the tendency, at least in the later works, towards neologism⁴⁴ and the use of Greek-Latin doublets.⁴⁵ The results of these surveys make it possible to now have a clearer picture of the translations of Galen performed

37 See, e.g. Bossier (1997: 84–9, 113–14); Gundert (2013: 899–903).

38 See Fortuna and Urso (2009: 145–7) for an overview.

39 More on this method in Fortuna and Urso (2009: 149–53); Urso (2011: 145–6).

40 Bossier (1997: 90–1); Urso in Fortuna and Urso (2009: 165); Gundert (2013: 896, 912).

41 Urso (2011: 155); Garofalo (2014: 42).

42 Bossier (1997: 90) is the first to suggest the research of 'mots favoris' and of 'traductions plutôt insolites ou complètement inattendues', as useful clues to identify the translator.

43 See e.g. Garofalo (2014: 38–9); Gundert (2013: 897–8). This tendency of the translator may be the reason of 'unexpected' translations, such as the one of *teleōs*, already mentioned, or the one of *deinos* with *versutus*, for which see Urso in Fortuna and Urso (2009: 164).

44 Durling (1992: 36–48); Urso in Fortuna and Urso (2009: 165–6); Urso (2013: 864–9).

45 Durling (1992: 41); Urso in Fortuna and Urso (2009: 167–8); Gundert (2013: 898–9).

by Burgundio than that outlined by Charles Haskins, just under a century ago, in his pioneering studies on these issues. To the ten titles indicated by Charles Haskins (*On Mixtures*, *On the Natural Capacities*, *On the Preservation of Health*, *On the Different Kinds of Fevers*, *On Affected Parts*, *Synopsis on the Pulse*, *On the Different Kinds of the Pulse*, *On Crises*, *Therapeutic Method* [7–14], *On Hippocrates' Aphorisms* [1–4.59])⁴⁶ we can add ten more (*Art of Medicine*-final catalogue, *On the Elements According to Hippocrates*, *On the Pulse for Beginners*, *On the Causes of the Pulses*, *On Sects for Beginners*, *On Hippocrates' Regimen in Acute Diseases* IV, *On Distinctions in Symptoms* with the other treatises on diseases and symptoms, that are *On the Different Kinds of Disease*, *On the Causes of Diseases*, *On the Causes of Symptoms*);⁴⁷ the whole picture shows a convergence not only with the interests of the Salerno School but also with the Alexandrian canon, which seems to be reproduced with few variants.⁴⁸

Although only a few of the translations are dated,⁴⁹ we can follow the basic steps along which the translator's work programme was developed by studying the relative chronology of his versions, the study of which was started in the 1990s by Fernand Bossier.⁵⁰ On the basis both of the dating of some translations and of some significant and constant drifts over time in his translation choices,⁵¹ it is plausible that he translated Aristotle before Galen.⁵² Precisely the completion of the *Art of Medicine* commissioned by Bartholomew may have stimulated in him an interest in the texts of the latter, which he continued to translate into Latin, starting with the physiology works: *On the Elements According to Hippocrates* and then *On Mixtures*, which Bossier dates to c. 1151.⁵³

46 Haskins (1924: 208). Haskins actually mentions a translation of *Aphorisms* of Hippocrates, which however has to be identified with the translation of the commentary on *Aphorisms* by Galen; see the references in Urso (2011: 148, n.15).

47 Recent demonstrations of Burgundio's authorship of Galenic translations are to be found in Durling (1993); Gundert (2013); and in the works cited at nn.29 and 30.

48 Fortuna in Fortuna and Urso (2009: 147–9).

49 All the exterior clues concerning the chronology of the translations are to be found in Classen (1974).

50 Bossier (1997: 94–102).

51 I mention only his treatment of the particle *ge*, which in earlier translations is mostly not translated while it is regularly rendered in later translations, showing a growing attention of Burgundio to providing an exact version of the Greek text: see Bossier (1997: 99); Urso (2013: 873).

52 Bossier (1997: 102).

53 See Bossier (1997: 100); as far as the chronology of the *On Elements* is concerned, I refer to the still unpublished research of Domenico Pellegrino, who is preparing under my direction the critical edition of this translation as PhD thesis. Of all the Galenic translations by Burgundio, only the *On Mixtures* and the *On Affected Parts* have been critically edited; see Durling (1976; 1992).

The translations of the two commentaries on Hippocrates must however be dated later, and both display translation choices in common with the version of the *On Affected Parts*, for which Bossier suggested a date not long after 1165, and in particular that of the *Aphorisms*, which shares common traits also with the version of the *On the Preservation of Health*, confidently dated to 1178/9.⁵⁴ If correct, these dates may represent an interesting indication that the relationship with Salerno lasted for around 30 years. Before the *On Affected Parts*, but after the *An Exposition of the Orthodox Faith* by John of Damascus, dated 1153/4, Burgundio must also have translated the *On Distinctions in Symptoms*,⁵⁵ while at the end of his translating career we find the incomplete version of the *On Sects for Beginners*, dated 1184/5.

The scientific impact of Burgundio's translations is significant, but it is true that they underwent competition from those of Gerard of Cremona, as is immediately clear also by comparing their witnesses. Only translations of which there is no alternative Arabic-Latin version, such as that of *On the Natural Capacities*, had an extensive manuscript tradition and also circulated in manuscript form in the universities.⁵⁶ And only nine of the translations by Burgundio were published in the complete works of Galen printed from 1490 to 1528, sometimes in an anonymous form.⁵⁷

2.2 *The Thirteenth Century: the Mysterious Stephen of Messina and William of Moerbeke*

Only recently has the identity of the author of the Greek-Latin translation of *On the Capacity of Cleansing Drugs* come to light, attributed in the explicit of ms. Palatinus lat. 1211 (fourteenth century) to *magistro Stephano de Messina*.⁵⁸ This text, which must also have been used in university lessons, soon had a critical edition – something which has failed to happen for most of the medieval Latin translations of Galen, still largely unpublished. In 1960, in fact, a young student of Karl Deichgräber, Jürgen Ehlert, who did not know ms. Palatinus,

54 Urso in Fortuna and Urso (2009: 154–68); Urso (2011); Urso (2013), with further clarifications.

55 Gundert (2013).

56 See Fortuna in Fortuna and Urso (2009: 143–4) and the list of manuscripts on the online catalogue of *Galenolatio*, at www.galenolatio.com (accessed 18 October 2017), by Stefania Fortuna. To this catalogue, intended as a revision and an update of the classical one by Diels, I refer for the manuscript traditions of all the translations mentioned from now on.

57 See Fortuna (2005: 486–98), to which I refer for the first printed editions of the translations mentioned from now on.

58 Schuba (1981: 203).

edited it as an anonymous work facing the Greek text,⁵⁹ and it was published anonymously in the first printed editions of Galen. Ehlert noticed the resemblance of the translation to Laurentianus Plut. 74.22, one of the Ioannikios manuscripts brought to Italy by Burgundio, but only after the backdating of the manuscript by Wilson, Stefania Fortuna made it possible to indicate the translation model in this *codex* or in an apograph thereof.⁶⁰ Fortuna also proposed identifying the author of the translation as Stephen of Messina, translator in Latin of astrological texts both from Arabic (such as the *Centiloquium Hermetis*, dedicated to King Manfred, r. 1258–66), and from Greek (such as the *De revolutionibus annorum nativitatis*, dated 1262), which Burnett in turn attributed to Stefano Takki of Messina, *interpretes* and *notarius*. Galen's translator could thus also be Stefano Protonotaro, an exponent of the Sicilian school of poetry, with whom the two figures have been separately associated.⁶¹

If this identification is correct, Stefano would represent the sole example of a translator both from Greek and Arabic among the medieval interpreters of Galen, at least on the basis of current knowledge, but plausible in Norman Sicily, that still retained Greek and Arab cultures. In this context, in which the Swabian sovereigns promoted a cultural policy of spreading philosophical and scientific texts, we know for certain of an interest in medicine on the part of Bartholomew of Messina, also active at Manfred's court and a translator not only of Aristotle, for which he is well known, but also of Hippocrates' *On the Nature of the Child* with whom Stephen shares various equivalences: for example, that of *dēlon* with *palam* or *dio* with *propter quod*. In any case, Stephen seems to have his own definite translation style. While showing great respect for Greek morphology, he applies literalism without excessive rigidity, both in the order of words and in the rendering of syntax, paying particular attention to clarity: there are few transliterations and, on the contrary, frequent explanations of implied elements. Another characteristic feature is the addition of incidental expressions, such as *inquam* and *dico videlicet*.⁶²

The second half of the thirteenth century saw another prolific translator of Aristotle, probably the most famous: the Dominican friar William of Moerbeke, who started work as a translator in Greece in 1260. He also translated other scientific texts, especially astrological and mathematical, and in the same way as Bartholomew vis-à-vis Hippocrates, was occasionally also a

59 Ehlert (1960).

60 Fortuna (2010: 309–11).

61 Fortuna (2010: 315–16; 2012: 182–3); Burnett (2014).

62 On the translation style of Stephen see Fortuna (2010: 316–31; 2012), in which we found comparisons with Bartholomew of Messina and William of Moerbeke as well.

translator of Galen.⁶³ As we learn from the colophon of several manuscripts, on 22 October 1277, at the pontifical court in Viterbo, he in fact translated the *On the Capacities of Foodstuffs*. Only a partial critical edition of the first book of this translation has been published,⁶⁴ but it was included in the Bonardo incunabulum and in the subsequent Latin editions of Galen until 1528.

We do not know the origin of William's interest in Galen's treatise, which he stated he had translated, according to the very purpose of his work as a translator, to offer a 'spark of light' (*quid luminis*) to Latin literature.⁶⁵ He may have been influenced by his contact at the pontifical court of Viterbo with Campanus of Novara, a great mathematician and commentator of Euclid, but also appreciated for his medical knowledge,⁶⁶ or perhaps with the very person the translation was dedicated to, the physician Rosello d'Arezzo. We do not even know if William was in contact with Stephen, with whom he shares some translation choices: for example, the renderings of *dē* with *itaque* or *pampolu* with *valde multus*, together with use of the suffix – *alis* in linguistic creation.⁶⁷ It is however certain that William used a good Greek manuscript, close to the precious Weissenburgensis 64 (sixth century)⁶⁸ and that the translation also had a certain diffusion: it survives in at least twenty witnesses and some of these were used for university education.⁶⁹

2.3 *Between the Thirteenth and Fourteenth Century: Peter of Abano, 'un amateur dans la cohorte des traducteurs du grec'*

As demonstrated by the numerous studies conducted on his translations of Aristotle, William is a precise and competent translator. The same cannot be said of Peter of Abano, a prominent figure in the cultural environment between the late thirteenth and early fourteenth century, but – as Marie-Thérèse d'Alverny called him – 'un amateur dans la cohorte des traducteurs du grec'.⁷⁰

Peter's biographical details, starting with the date of birth (1250 or 1257) and death (1315 or 1316 or 1317), are often shrouded in mystery and even legend.⁷¹ Doctor, philosopher, scholar of astrology and alchemy, professor of medicine

63 An updated profile of this translator is to be found in Fryde (2000: 103–43).

64 Camps (1987).

65 See the dedication published in d'Alverny (1985: 27, n.27).

66 Paravicini Bagliani (1975: 444, n.1).

67 Fortuna (2010: 322–3, 325; 2012: 177–9, 181).

68 Wilkins (2013: 36). See also Helmreich in Koch et al. (1923: xl).

69 E.g. the mss. Vaticanus lat. 2375; 2376; 2382 and 2385, about which see Pesenti (2001: 125–7).

70 d'Alverny (1985: 63).

71 An updated profile of Peter of Abano is to be found in Ventura (2015).

at the University of Paris and in the *studium* of Padua, in close contact with the leading figures of culture of these two cities, probably forced by his adherence to astrology and his rationalist theories to face disputes and (perhaps) court trials during the last years of his life, he travelled to the East where he learnt Greek and presumably acquired most of the manuscripts that he later translated, moreover not only of Galen.⁷² In the case of the latter, he used manuscripts similar to Mutinensis 109 and Marcianus gr. 276, or possibly these very same manuscripts, considering that it now seems we should revise their late dating.⁷³ Even the date of his trip to the East is controversial, but it probably dates to the years straddling the thirteenth and fourteenth centuries, between his stay in Paris and his return to Padua.

Peter's translations reveal his personal interest in the theory of humours and temperament:⁷⁴ he in fact translated the *On the Best Constitution of Our Bodies*, *On Good Condition*, *On Black Bile*, *On Marasmus* and the *On the Anomalous Dyskrasia* – plus the *On the Exercise with the Small Ball*, a treatise on gymnastics as a medical practice. Additionally, he completed the translations of the *On Sects for Beginners* and the *Therapeutic Method*, left unfinished by Burgundio. These integrations survive in a good number of manuscripts, especially of the *Therapeutic Method*, which was particularly popular in the Middle Ages. Other translations, on the contrary, witnessed very limited circulation, including that of the *On the Anomalous Dyskrasia*, the only one which entered the circuits of university production in the fourteenth century, but in the pre-existing Arabic-Latin version of Gerard of Cremona. Of Peter's translations, which are still not available in critical editions today, only two are published in Galen's complete print editions: that of *On Black Bile* and, in anonymous form, that of *On Marasmus*.

Peter felt mistrust for translations from Arabic. As of the *On the Anomalous Dyskrasia*, there also existed a full Arabic-Latin translation of *Therapeutic Method* by Gerard in his time, which he however judged unfaithful (*distorta*) and incorrect (*mendosa*).⁷⁵ His translations, however, can be criticised in various points, due to: the often inaccurate rendering of the tenses and the diathesis of the verbs; the presence of equivalents which are semantically inadequate in various ways; the confusion of phonetically similar Greek terms; and the difficulty of understanding the Greek syntax, which sometimes led to gross

72 More in Ventura (2015); Urso (2014: 53–4).

73 See Pietrobelli (forthcoming); considerations about Galenic manuscripts used by Peter are to be found in works concerning his translations; see d'Alverny (1985); García Novo (2007); Fortuna (2008); Boudon-Millot (2010); Palmieri (2013); Urso (2014; 2017).

74 d'Alverny (1985: 63, n.9).

75 *Conciliator*, diff. 29, cit. in d'Alverny (1985: 33).

misunderstandings. The defects are highlighted by comparison with the correct renderings of Niccolò of Reggio, who translated in turn all the small works translated entirely by Peter, with the sole exception of *On Black Bile*.⁷⁶

2.4 *The Fourteenth Century: Niccolò of Reggio, translator regius*

The superiority of Niccolò of Reggio's translations compared to those of Peter of Abano is hardly surprising: Peter learned Greek (imperfectly) in the East and translated for personal interest, while Niccolò was a Greek from the Deoprepio (or Theoprepos) family in Calabria, working in a bilingual environment.⁷⁷ Moreover, besides being a physician (to Philip of Taranto, the king's brother, and then to Robert I of Anjou himself) and a teacher at the University of Naples, Niccolò was also a professional translator. As translator, he realised a cultural programme promoted by the sovereigns (first Charles II and later Robert I) and supported by other members of the Angevin court, who provided him, in addition to regular payments and collaborations, with Greek books bearing good traditions, coming – at least in part – directly from Constantinople, rather than from southern Italy.⁷⁸ Niccolò also emphasised the usefulness of his activity, which he hoped would benefit the common good.⁷⁹

Niccolò did not only translate Galen: one of the early payments made to him as a *translator regius* in 1310 mentions both *libros medicinalis scientie* and *libros philosophie*,⁸⁰ and translations by other authors are attributed to him in manuscripts. It is however certain that the translations from Galen represent the most significant part of his production, seeing that from 1308 (when he completed the *On Treatment by Bloodletting* and when his first payments as a translator are recorded in the royal accounts) to 1345 (the date of his latest known translation, that of the *Liber de disnia*), he is recorded as having translated over fifty authentic and pseudo-epigraphic works by Galen. Stefania Fortuna – who is working on establishing the corpus of his writings and has already corrected and supplemented in several points the list of titles drawn up by Lynn Thorndike,⁸¹ proposing a relative chronology for some undated

76 See Urso (2014; 2017), where the comparison carried out by d'Alverny (1985) is deepened.

77 For an updated overview on Niccolò I refer to Nutton (2013), with bibliography. In the volume in which Nutton's paper is published we can find other papers that discuss Niccolò's translations.

78 E.g. the *On the Composition of Drugs According to Places* was sent to Robert of Anjou by Andronikos III Palaiologos, Emperor of Constantinople (r. 1328–41); see the *prologus* to the translation in Lo Parco (1913: 291–2); and Degni's contribution (Chapter 6) in this volume. See also Nutton (2013: 948).

79 See the preface to his translation of *On Problematical Movements* in Nutton (2013: 942).

80 See Lo Parco (1913: 258, n.3).

81 Thorndike (1946).

translations – recently attributed to him the translation of the Hippocratic treatise *On Regimen in Acute Diseases* (ll. I–III) handed down anonymously in ms. Vaticanus lat. 2369, also showing that it depends on a Greek original of Galenic tradition.⁸² This translation can also be included among those of Galen and shows that Niccolò also used Galen as a filter for the Hippocratic text.

Niccolò was the last of the medieval translators from Greek. Like his predecessors, he aimed to increase the existing Galenic corpus by translating works that were not yet available: for example, in addition to those already cited and other short treatises, he translated the monumental *On the Composition of Drugs According to Places* (1335) and – as has been ascertained recently – the commentary to Hippocrates' *Prognostic*.⁸³ With the same end, he also supplemented partial or incomplete pre-existing translations, such as those of the commentaries of Galen to *Aphorisms*⁸⁴ and of the *On the Preservation of Health*, of which Burgundio had translated, respectively, books 1–4.59, almost entirely, and certainly book 6. An abridged translation of the first five books of *On the Preservation of Health* was actually available, which according to Konrad Koch was not by Burgundio⁸⁵ and which Niccolò duplicated, producing an *ad verbum* translation. In other cases Niccolò duplicated, and at times supplemented, existing translations: for example, he translated the eleven books of the *On the Capacities of Simple Drugs* of which books 1–6 were available in the Arabic-Latin translation of Gerard of Cremona, and the seventeen of the *On the Function of the Parts of the Body* (1317), of which an Arabic-Latin translation of the first ten books titled *De iuvamentis membrorum* circulated at the time. In this case, moreover, he explicitly states that he has produced the new translation due to the quality of Arabic translation, which he deemed to be an inadequate 'abridgement' (*compendium seu extractio*) 'rather than a faithful and complete translation' (*quam fidelis et completa translatio*).⁸⁶ It has moreover been said that Niccolò also redid five Greek-Latin translations carried out according to the *verbum de verbo* method but with mistakes and inaccuracies by Peter of Abano. In these cases, he had other Greek manuscripts available, which shows he translated from scratch, without using pre-existing translations: if he was familiar with them, then, he must have found them inadequate.⁸⁷

82 Fortuna (2017); new contributions also in Fortuna (2014; 2018).

83 Fortuna (2018).

84 Urso (2011).

85 Koch (1923: xvii–xviii).

86 See the *proemium* published in Lo Parco (1913: 295).

87 See Urso (2014; 2017).

As effectively defined by Vivian Nutton, Niccolò is an 'aggressive translator from the Greek'.⁸⁸ He uses Greek transcriptions even in the titles (for example, *De marasmo*, vs. *De tabe* used by Peter of Abano for the *Peri marasmou*); moreover, his bilingualism leads him to instinctively use Greek terms from everyday – or in any case, not specifically medical – language (e.g. *colum*, *drachma*, *gygnaesticus*).⁸⁹ Faithfulness to the model, which he pursues consistently, also with frequent recourse to calques or by seeking etymological correspondence between Latin and Greek terms, is never achieved to the detriment of clarity. This is due in part to his mastery of two languages, allowing him to translate Greek and adapt it to the morpho-syntactic structures of Latin (e.g., by habitually rendering substantivised adjectives with their corresponding nouns and avoiding the mechanical use of calques). It is also partly due to his constant explication of implied terms within a sentence: peculiar is that of the terms for 'book' or 'treatise', usually omitted by Galen in the citation of his own bibliography.⁹⁰

Despite their quality, and in spite of the attention they received from some ancient scholars (as Guy de Chauliac or, a century later, Jacques Despars), Niccolò's translations remained marginal in 'a *curriculum* that was relatively stable across European universities', both because they dealt with themes peripheral to the interests of the period and due to their linguistic style, which was strongly Hellenising, and therefore more distant than ever from the Arabised Latin to which the doctors of the time were accustomed.⁹¹ This explains why they have a limited tradition in terms of manuscripts, which in the great majority are not 'typical university manuscripts, used for study' but rather 'collectors' items ... brought together for someone who wanted to have a collection' as complete as possible of Galen.⁹² However, they prove valuable to modern scholars interested in Galen's text, both because of their strict literalism and because of their dependence on good sources, mostly lost and superior to the surviving manuscripts. Among them, of particular interest are five translations of which the original Greek has been lost, that is, those of the treatises *On Sustaining Causes*, *On Antecedent Causes*, *On the Parts of the Art of Medicine*, *On Problematical Movements*, and *Outline of Empiricism*: it is therefore not

88 Nutton (2013: 948).

89 Nutton (2013: 948); Urso (2017: 148).

90 The examples are to be found in Urso (2014; 2017); see also Wille (1963).

91 McVaugh (2006); Nutton (2013: 949–51).

92 Nutton (2013: 950).

surprising that they were soon published in a critical edition⁹³ and still represent the majority of the edited translations by Niccolò.⁹⁴

3 Conclusion

In an article in 1982, focusing on the studies of twelfth/thirteenth-century medieval translations sixty years after the first studies on the topic by Charles Haskins, Marie-Thérèse d'Alverny highlighted the contributions brought to the knowledge of the phenomenon by research on the manuscript tradition and by comparing the translation with the original text, 'sometimes resulting in identifying the translator of an anonymous version'.⁹⁵ As seen from the picture outlined here, recent decades have led to further contributions in these areas in relation to the entire Latin corpus of Galen, also in terms of chronological research. However, there is still a serious lack of editions of the texts, which needs to be addressed, also to enable research to continue on a solid basis. Supplying the Latin Galen with a corpus of critical editions including complete bilingual indices, similar to those that make up the corpus of the Latin Aristotle, is the challenge that awaits scholars in the coming years. The availability of good manuscript catalogues, along with more solid knowledge of the models and translation style of the individual translators, means that the time is ripe to rise to such a challenge.

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93 See, respectively, Kalbfleisch (1904) and Hankinson (1988); Bardong (1937) and Hankinson (1998); Schöne (1911); Larrain (1994); Bos and Nutton (2011); Bonnet (1872) and Deichgräber (1965: 42–90), with a back-version into Greek.

94 See, in addition to the editions in n.93, Schmutte (1941); Wille (1960); Marinone (1973); Nutton (2003).

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Galen in the Medieval Universities, 1200–1400

Michael McVaugh

Which of Galen's writings were potentially 'available' to the medical faculties of the early universities? Which were actually 'accessible' to consultation? And which, if any, appeared of such importance as to be systematically 'assimilated' into medical thinking? It will be helpful to distinguish between these very different questions as we consider the fate of Galen's works in the first two centuries or so of the medieval universities, roughly 1200–1400.

A great many of Galen's writings were already 'available' by 1200, in the sense that they were in existence in Latin translations made from Arabic or from Greek. Some, like the *Tegni* (*Art of Medicine*) or the *Megategni* (Constantine the African's version of an Arabic résumé of the *Therapeutic Method*) had indeed already been available by 1100, but the twelfth century had been the great age of Galenic translation. In Toledo, Gerard of Cremona (d. 1187) had been responsible for translations from Arabic of *De elementis* (*On Elements*), *De complexionibus* (*On Mixtures*), *De simplici medicina* (*On the Capacities of Simple Drugs*), *De crisi* (*On Crises*), *De creticis diebus* (*On Critical Days*), *De malitia complexionis diverse* (*On the Anomalous Dyskrasia*), *De ingenio sanitatis* (the *Therapeutic Method*), the Galenic commentaries on the Hippocratic *Prognostic* and *Regimen acutorum* (*Regimen in Acute Diseases*), and a new version of the *Tegni* with commentary by 'Alī Ibn Riḍwān. From Greek, Burgundio of Pisa (d. 1193) produced translations of *De differentiis februm* (*On the Different Kinds of Fevers*), *De regimine sanitatis* (*On the Preservation of Health*), *Therapeutica* (books 7–14 of the *Therapeutic Method*), *De complexionibus* (*On Mixtures*), *De sectis* (*On Sects for Beginners*), *De interioribus* (*On Affected Parts*), *De naturalibus facultatibus* (*On the Natural Capacities*), and several of Galen's works on pulse. If we also include translations that so far escape attribution, like the *De iuvamentis membrorum* that was an abridgement of *De usu partium* (*On the Function of the Parts of the Body*), or the *De morbo et accidenti* (*On Diseases and Symptoms*) that united four Galenic works on diseases and their symptoms under that title, there were two dozen or so Galenic works available in Latin at the beginning of the thirteenth century.¹ Yet curiously we can find no references to their use by that time.

1 The starting point for the close study of Galen translations in the Middle Ages will always be the two articles of Richard Durling (1967; 1981). His earlier Galenic census – Durling

Thus, whether all these works were not merely available but 'accessible' by 1200 is a different question. A list of works from the first decade of the thirteenth century that were the basis of study at Paris suggests that they may not yet have been accessible: the medical student should study, it says:

Johannitius, Hippocrates' *Aphorisms* and *Prognostic* both, Galen's *Tegni*, and the *Pantegni*, written by Galen but translated by Constantine. Let him read both the *Particular* and *Universal Diets* of Isaac as well as his book *On Urines*, Constantine's *Viaticum*, the book of urines and the book of pulses, Dioscorides, Macer (on the nature of herbs), and the works of Alexander [of Tralles].²

This is still very much a twelfth-century reading list, built around the seven works often called the *ars medicinae* that were then and for a long time at the heart of medical education: Johannitius' *Isagoge*, Hippocrates' *Aphorisms* and *Prognostic*, Galen's *Tegni*, the *Urines* of Theophilus, and the *Pulses* of Philaretos. Besides the *Tegni*, there is no other Galenic work in the list.

So when did the recently 'available' Galenic works actually begin to be consulted by Latin physicians? We can only answer by detecting references to them in the writings of medical masters in the early universities. For our purposes here, the moment defining the creation of a university will be the formal recognition by higher authority that masters have the right to control education: to define a curriculum for students and to set examination requirements in the different fields – arts, medicine, theology, law – that a student must pass in order to become a teaching master in his turn. At Paris, that act had taken place by 1213; at Montpellier, in 1220. At Bologna, the moment is obscure but was roughly at mid-century. But these new universities were weakly organised, and their institutional history has left almost no trace before the 1270s; at Paris, in fact, the young medical faculty may not have recovered for several decades from the dispersion of 1229. Consequently we have to recreate their reading from references in the writings of the few medical authors whom we can date

(1961) – can also be studied with great profit. On Galen's translations from Arabic and Greek into Latin, see Long (Chapter 18) and Urso (Chapter 19) in this volume respectively.

2 'Iohannitium et tam aphorismos quam pronostica Ypocratis et tegni Galieni et pantegni. Huius operis auctor est Galienus sed translator Constantinus. Legat etiam tam particulares quam universales dietas Ysaac et librum urinarum et viaticum Constantini cum libro urinarum et libro pulsuum et Dioscoriden et Macrum in quibus de natura herbarum agitur et libros Alexandri'. The text is readily accessible in Haskins (1960: 374–5). On its date, see Hunt (1984: 28–30).

roughly to the period 1225–75 and can associate, with some probability, with a particular medical school.

Perhaps the earliest of these authors is Gilbertus Anglicus, who was apparently a young medical master at Paris, perhaps even a student (bachelor), when in the late 1220s he composed a commentary on Giles of Corbeil's *Urines* that can introduce us to the Galenic works being read there at that moment. Gilbert is already referring regularly to Avicenna, whose *Canon* was the longest and most important of Gerard's medical translations, but he mentions only three works by Galen. One of them is Galen's commentary on Hippocrates' *Aphorisms*; the other two are *De crisi* and *De iuvamentis membrorum*.³ Gerard de Berry, probably an older Parisian master, had completed a commentary on the *Viaticum* by 1237, the date of a copy in Bern; again Avicenna was his favourite authority, but Gerard also referred his reader to four Galenic books: *De regimine sanitatis*, *De interioribus*, *De morbo et accidenti*, and *De creticis diebus*.⁴ Thereafter there is no hint of academic medicine at Paris until the 1260s.

We can trace a slightly more continuous picture of reading at early Montpellier. We may start from a charter of 1240 naming ten men as medical masters there, two of whom are known to us as authors of commentaries on the individual works in the *ars medicine*: Henry of Winchester, identified in the charter as *chancellarius*, and Cardinalis. From Henry a commentary on the *Isagoge* survives, one whose references seem quite old-fashioned: he quotes older literary figures like Rémy d'Auxerre and Macrobius, and his principal medical authorities are the *Tegni* and Constantine's *Pantegni*; he does not seem to know Avicenna, but he does refer to three Galenic works – *De crisi*, *De interioribus*, and *De elementis*. Cardinalis too has left us a commentary on the *Isagoge*, but he was evidently writing at a considerably later date; by his time, literary sources are no longer relevant to medical teaching and Avicenna's *Canon* is fundamental to his discussions. It can only be guesswork, but we might suppose Henry's teaching to date from early in the history of the faculty, say 1225–30, and Cardinalis' from fifteen or twenty years later. By that moment, 1250 or so, a familiarity with Avicenna's schematisation of Galenism had made Galen's own writings easier to appreciate in detail. Cardinalis' commentaries show that he found a wider range of Galenic material accessible to quotation: *De simplicibus medicina* and *De complexionibus*, the *Tegni* with Ibn

3 McVaugh (2010: 303).

4 See Gerard de Berry (1505), where these works are mentioned, respectively, in the preface and on fols 101vb, 112vb, and 178ra.

Riḍwān's commentary, and Galen's commentary on *Regimen acutorum*, as well as *De crisi* and *De interioribus*.⁵

Finally, Paris-trained Gilbertus Anglicus seems eventually to have left medical practice to teach at Montpellier and there, probably in the 1250s, composed his well-known *Compendium medicine*. By now a still larger number of Galenic works was in use at the school: the *Compendium* cites *De crisi* and *De interioribus* (already used by Henry and Cardinalis, of course), *De simplici medicina* and *De complexionibus* (used by Cardinalis), but also *De morbo et accidenti*, *De creticis diebus*, and *De iuvamentis membrorum*.⁶ The sketchy picture that these scattered sources give us is of a steadily increasing accessibility of more specialised and technical Galenic works to this medical faculty during the middle third of the thirteenth century. By 1260 or so a half-dozen of these specialised Galenic translations had moved from theoretical availability to very real accessibility at Montpellier, in the sense that the masters there were evidently able to consult copies as a matter of course; in effect, these works had become part of the faculty's immediate working library.

One would expect that having recognised their worth, the medical masters would begin to teach Galen's books to their students, thus bringing about their full assimilation by the learned medical community. The integration of a particular few of them into the university curricula was not difficult. By 1260 or so the three Hippocratic works included in the old *ars medicine* had come to be studied in conjunction with the Arabic-Latin translations of Galen's commentaries on these works made in the twelfth century: the *ars medicine* was turning into the *ars commentata*.⁷ But the less familiar or more difficult Galenic writings took longer to assimilate. The first evidence that this was actually happening comes from Paris, where after decades of institutional silence following the dispersion of 1229 the Paris medical faculty came to life again in the 1270s in a series of acts: one of 1270/74 established the old *ars medicine* as the basis for the medical curriculum. But there is clear evidence that Paris students were now expected to master much more than those hoary authorities. At some point

5 One other author from this period has been tenuously associated with Montpellier, Gautier Agilon, whose *Summa medicinalis* is studded with citations of Avicenna but shows only a slight knowledge of Galen: he uses the Galenic commentaries on the three Hippocratic texts in the *ars medicine* – *Aphorisms*, *Prognostic*, and *Regimen acutorum* (incorporated into the *ars* after 1200) – and *De interioribus*, cited twice at the outset as if to show off his knowledge, but never referred to again; the text is edited in Gautier Agilon: Diepgen (1911). (Gautier is not named among Montpellier's medical masters in the list of 1240, but perhaps his *Compendium* was written in the previous two decades.).

6 McVaugh (2010: 311–12).

7 See O'Boyle (1998: 128–40).

during the following decade, one of the Paris masters, Jean de Saint-Amand, assembled a study guide for his students, the *Revocativum memorie*, and a part of this guide contained a faithful précis of a dozen or so medical texts that students were evidently expected to read closely.⁸ Saint-Amand outlined each in a manner faithful to the structure and content of the original, quoting from them so pithily that we can determine which translation of a particular work was being read at Paris. These books included some long-familiar texts, including a few constituents of the required *ars* – Galen's *Tegni*, Hippocrates' *Prognostic*, and *Aphorisms*, and *Regimen acutorum*, but also many of the twelfth-century Galen translations: *De interioribus*, *De crisi*, *De ceticis diebus*, *De morbo et accidenti*, *De simplici medicina*, *De complexionibus*, *De iuvamentis membrorum*, and *De malicia complexionis diverse*. The very same Galenic works that by 1260 had proved their value to the Montpellier masters had by the 1280s become expected objects of study by Paris students, and indeed in standardised formats, so that Saint-Amand could divide his summaries up by book and chapter numbers that students would recognise.

At Bologna, it is likely that there were teachers of medicine from early in the century, but an institutional framework seems only to have grown up there in the 1260s, perhaps not unconnected with the arrival of Taddeo Alderotti to teach there about 1264; from then until the early 1290s he was a committed proponent of the direct study of Galenic writings, and he passed that vision on to his students.⁹ In an early work, a commentary on the *Tegni* completed before 1283, he can be found quoting from virtually the same Galenic sources that Jean de Saint-Amand was expecting his students to read at just this moment – *De complexionibus*, *De ingenio sanitatis*, *De simplici medicina*, *De interioribus*, *De ceticis diebus*, *De iuvamentis membrorum*, *De morbo et accidenti* – as well as many more; they were all evidently at his fingertips.¹⁰ He subsequently produced commentaries on some of the same works, *De crisi*, and *De differentiis febrium*, making them even more his own. As for *De interioribus*, Taddeo famously went systematically through the two translations of the work, making notes of the differences between the two and indicating which he thought was to be preferred. By his death in 1295 he had certainly fully assimilated these particular Galenic treatises, and his younger associates at Bologna were following his lead and preparing commentaries on Galenic texts from this same short list.

8 Jacquot (1994).

9 Siraisi (1981: 39–41, 100–5).

10 This is based on a survey of the citations in Taddeo Alderotti (1522).

Though we have no comparable testimony from Montpellier in the 1270s and 1280s, much the same process of assimilation must have been taking place. Arnau de Vilanova left private practice in Valencia to teach at Montpellier at the beginning of the 1290s (he had been a student at Montpellier c. 1260), and in the decade that followed he 'read' to his students not just some of the constituents of the old *ars* (Galen's *Tegni*, Hippocrates' *Regimen acutorum*), but a number of the 'new' Galenic treatises: *De morbo et accidenti*, *De ingenio sanitatis*, and *De malicia complexionis diverse*.¹¹ Only the last of these commentaries survives, but it reveals Arnau drawing on all the same works contained in the Paris Galen to explicate his subject; furthermore, in 1300, a year before his active teaching came to an end, he took the trouble to prepare a summary of *De interioribus* 1–2, more detailed even than St-Amand's, as a guide for students.¹² Less than a decade later, while Arnau was in Rome in 1309, Pope Clement v called on him for advice as to a new curriculum to be required of Montpellier's medical students, and Arnau's recommendations must have focused on the need to study Galen. No more was the *ars medicine* to be at the heart of study; instead, Arabic authorities like Avicenna or Rhazes were to be read, and with them a number of works by Galen were specified: *De complexionibus*, *De malicia complexionis diverse*, *De simplicibus medicina*, *De morbo et accidenti*, *De crisi*, *De ceticis diebus*, *De ingenio sanitatis*, and the traditional *Tegni*.¹³

In an influential article twenty years ago, Luis García Ballester declared that Arnau de Vilanova had been the principal agent in bringing a 'new Galen' to Montpellier, by which he meant not just these few works we have mentioned but 'a body of medical literature consisting of some thirty-five works written by or attributed to Galen',¹⁴ and he argued that the same 'new Galen' was simultaneously being taken up at Paris and Bologna. More recently, Vivian Nutton has offered a corrective to this conclusion: interpreting García Ballester's argument as implying a large organised collection of Galenic texts traveling together in manuscripts to meet the needs of scholars, he has shown that there was no standard content in fourteenth-century Galenic manuscripts, rather a considerable variability.¹⁵

Both these authors use the term 'new Galen' to refer to a large set of newly influential works, a set that extended far beyond a few central ones. It is certainly true that by 1300 there were many new Galenic treatises available to European

11 On Arnau's commentaries, see Paniagua (1994: 35–6 and n.13).

12 García-Ballester et al. (1985).

13 Quoted in O'Boyle (1998: 148).

14 García-Ballester (1998: 56).

15 Nutton in Bos and Nutton (2011: 91–100).

readers. Translators in the thirteenth century, continuing the work of Gerard and Burgundio, include Mark of Toledo (Galen's treatises on the pulse, *De motibus liquidis*, *On Problematical Movements*), William of Moerbeke (*De alimentis*, *On the Capacities of Foodstuffs*), and many others – even Arnau de Vilanova himself (*De rigore*, *On Rigor*). These new texts were not merely theoretically available but were fully accessible to academic physicians, as Nutton's manuscript researches have shown. Yet for whatever reason, they did not move on to assimilation: they were accessible for casual reference, but they never became constitutive elements in readers' thinking. Consider Arnau's own *De rigore*, a translation that he finished in Barcelona in 1282: it was obviously 'accessible' to Arnau himself, but in the twenty-five years that followed he never once found occasion to refer to it in half-a-million words of medical writing: there is no sign that, in my sense, he had 'assimilated' his own translation.

For this reason it would seem to be historically more useful to employ the term 'new Galen' specifically to denote that small group of core texts that progressed from availability to accessibility to assimilation in the thirteenth century, the group that determined the shaping of medical thought at Montpellier, at Paris, and at Bologna during that period. At the risk of belabouring what will by now be very familiar to the reader, let us list those works once more:

De complexionibus (*De temperamentis*)
De creticis diebus (*De diebus decretoriis*)
De crisi
De ingenio sanitatis (*Methodus medendi*)
De interioribus (*De locis affectis*)
De iuvamentis membrorum
De malicia complexionis diverse (*De inequali temperie*)
De morbo et accidenti (*De morborum differentiis*; *De morborum causis*; *De symptomatum differentiis*; *De symptomatum causis*)
De simplicibus medicina

We have seen that these nine texts, essentially unknown in medical faculties seventy-five years before, had everywhere become acknowledged by 1300 as the essential core of Galenic thought, even if one or two others, like *De differentiis februm* and *Ad Glauconem* (*Therapeutics to Glaucon*) (both added to the Montpellier curriculum in 1340), were seen here and there as also of some value. García Ballester and Nutton each recognised these texts' centrality within the larger assemblage they call the 'new Galen',¹⁶ but without recognising

16 García-Ballester (1998: 66–8); Nutton in Nutton and Bos (2011: 95).

that that centrality goes back to the early part of the century, when their accessibility was no doubt prepared for by the masters' prior familiarity with Avicenna's schematisation of Galenic thought. The *libri Galieni*, collections of Galen's medical writings that become more and more common from the thirteenth century on, do indeed display a great variety, but despite that variability the earliest ones almost invariably contain our nine works, as do (for example) the following late thirteenth-century codices used by García Ballester and Nutton to exemplify their understandings of what the 'new Galen' meant to them: respectively MS Montpellier, École de Médecine 18, and MS Oxford, Balliol College 213.¹⁷ Our set of texts did apparently travel together as a group, even if it was surrounded by chance outliers (as in these cases, or, for another thirteenth-century example, as in MS Cesena, D.XXV.1). By continuous study over most of a century these particular writings had become part of the mental furniture of every academically trained physician, and had made Western medicine by 1300 far more truly Galenic than it had been a century before.

At exactly the moment when Montpellier was formalising the assimilation of the 'new Galen' in its curriculum of 1309, a new project to translate the works of Galen was being launched in Italy. Niccolò da Reggio of Calabria, a physician at the court of Robert I of Naples, began a programme to translate Galenic writings from Greek manuscripts available in southern Italy; his first datable translation was of *De phlebotomia* (*On Venesection*), finished in 1308, and he continued with remarkable commitment and energy until the early 1340s. Niccolò seems to have begun with the shorter works, but he soon tackled much longer treatises, like *De usu partium*, finished in 1317. Sometimes he completed earlier unfinished translations (he translated the last five books of *De simplicibus medicina* that Gerard of Cremona had not touched, and completed the Greek-Latin translation of the Hippocratic *Aphorisms* that Burgundio of Pisa had left incomplete), but in general his translations were of Galenic texts that were totally unknown in Latin, and he may have tried deliberately to avoid duplication; only a few of his new translations were of works already available in Latin (*De malicia complexionis diverse*, *De febribus ad Glauconem*). He worked word by word, with extreme literalness, so that today his Latin can be used to reconstruct the Greek manuscript from which he worked.¹⁸

17 García-Ballester (1998: 77), who mistakenly places this manuscript in Paris rather than Montpellier; Nutton in Nutton and Bos (2011: 37).

18 'Almost pedantic accuracy' (Nutton in Nutton and Bos, 2011: 81); 'a very hellenised vocabulary' (Nutton in Nutton and Bos, 2011: 82).

By the mid-1340s he had made fifty or so new texts potentially available to Latin readers.¹⁹

Naples was at some distance from the great medical faculties, of course, and actual access to Niccolò's translations was dependent on the vagaries of manuscript circulation, but Niccolò himself did something to ensure the diffusion of his translations. We know that in the 1330s he sent a number of them to the papal court at Avignon, from which copies could easily have made their way to nearby Montpellier; but he had visited Avignon before in the entourage of King Robert (who was also Count of Provence), and it would not be surprising if he had brought copies of his translations with him then. By the 1360s nearly forty of his Galen-versions were being consulted by Guy de Chauliac while composing his *Great Surgery* or *Inventarium*.²⁰ And at least ten of Niccolò's translations have been shown to have made their way to the library of the Paris medical faculty by 1350 or so.²¹ All the great academic centres probably had access to them by the 1350s.

But Niccolò's translations of Galen never reached the final stage of assimilation in the Middle Ages – they never became ingrained in Latin medical consciousness. One reason was of course that twelfth-century translators like Gerard and Burgundio had already translated all the big general works of Galenic pathology and therapeutics: none of the works that were left for Niccolò to translate were important enough to demand the schools' attention. We might think that *De usu partium* would have been an exception, but the Middle Ages were already well acquainted with its summary version, *De iuvamentis membrorum*, and this may have made the larger work less attractive, particularly because its focus was physiology and not the practical clinical medicine that was increasingly what mattered to physicians after mid-century. Moreover, the language of the 'new Galen', its constructions and terminology, had over many decades become constitutive of medieval medical discourse (often reinforced by similar language in Gerard's translation of Avicenna), and Niccolò's pedantically literal versions from the Greek were not entirely easy to reconcile with what physicians already knew. For example, Gerard's long-familiar translation of *De malitia complexionis diverse* began 'Malitia complexionis diverse quandoque in toto animalis corpore existit, sicut quod ei accidit inde in specie ydropisis'; Niccolò's version of the same text began: 'Inequalis

19 A useful list, though not completely up to date, is given in Thorndike (1946: 213–35).

20 McVaugh (2006).

21 McVaugh (2006: 300–1).

dyskrasia fit quidem et secundum totum animalis corpus quemadmodum anasarca'. In a curious way, Niccolò's texts needed to be 'translated' before they could be useful to the Latin medical world.²²

In 1405 the Bologna medical masters ratified a remarkably detailed four-year syllabus for their students to follow, detailed enough to let us judge whether fifty years of access to Niccolò's Galen had brought his translations into the curriculum in a manner that would ensure their eventual assimilation. In fact, the students' reading was almost exactly the same as that of Montpellier students a century before.²³ During those four years a Bologna student had to hear two different sets of lectures on Galen's *De differentiis febrium*, *De complexionibus*, *De malicia complexionis diverse*, *De crisi*, *De creticis diebus*, *De interioribus*, *De accidenti et morbo*, *De regimine sanitatis* book 6, *De virtutibus naturalibus* book 1; he also had to hear, twice, the first 5 books of *De simplicibus medicina* (thus omitting Niccolò's completion of the work) and books 7–12 of the 'Therapeutice' (*Methodus medendi*), probably meaning the Greek-Latin version by Burgundio. In addition, he had to hear lectures on *Ad Glauconem* twice (Niccolò had revised an old Greek-Latin translation, but it is impossible to be sure which version was being used at Bologna), and both *De utilitate respirationis* (*On the Function of Breathing*) and 'De tabe' once – the latter probably refers to Niccolò's version of Galen's *De marcore* (*On Marasmus*).²⁴

Almost all of this curriculum, of course, still consisted of the 'new Galen', the older translations that the thirteenth century had come to agree on as the necessary Galenic core of a learned physician's formation. Niccolò's translations were certainly accessible to Bologna, and there was a minor place for one or two of them in a Bologna student's training, but they had not affected the core in any serious way. The selected texts that made up the 'new Galen' had been 'new', perhaps, in 1300, but by 1400 they had become firmly entrenched in the schools, a very familiar Galen indeed.

22 Another example of the problems raised by a different technical vocabulary is presented in McVaugh (2006: 288–300). On Niccolò's translation methods, see Urso (Chapter 19) in this volume.

23 Indeed, Nancy Siraisi (1990: 71) suggests that these statutes 'probably formalise arrangements made in the late thirteenth century'.

24 Malagola (1888: 275–6).

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Galenic Pharmacology in the Middle Ages: Galen's *On the Capacities of Simple Drugs* and its Reception between the Sixth and Fourteenth Century

Iolanda Ventura

1 Galen's *On the Capacities of Simple Drugs*

Written during his second stay in Rome (from AD 169 onward), Galen's *On the Capacities of Simple Drugs* contains the bulk of Galenic theoretical and practical pharmacology.¹ The work consists of eleven books, of which the first five display, in a rather complicated structure and unclear fashion, the theoretical fundamentals of Galenic pharmacology (e.g., the theory of the four qualities, of *complexio*, the classification of simple remedies according to their light or heavy nature, to their cooling or heating effects, to their connection to the above-mentioned qualities, and to the intensity of their effects measured in 'degrees'), whereas books 6–11 describe properties of simple remedies belonging to the vegetal (books 6–8), mineral (book 9), and animal (books 10–11) world by listing the same remedies in alphabetical order. The Greek text is only available in the largely insufficient edition included in Karl Gottlob Kühn's *Galenī opera Omnia*.² Few Latin versions are accessible: apart from the text attached by Kühn to its edition of the Greek original, we may refer to the 'patchwork' version conflating the incomplete Arabic-Latin translation of book 1–5 made by Gerard of Cremona and, for books 6–11, the corresponding section of the (otherwise complete) translation prepared by Niccolò da Reggio printed, for the first time, in Venice in 1490.³ This version should represent, indeed, the point of departure for any analysis of the late medieval reception of the Latin *On the Capacities of Simple Drugs*, since it reflects the combination we can find in some late manuscripts, and the main function performed by Niccolò's translation, namely the integration of Gerard's one. Later Renaissance editions,

1 On Galen's pharmacology, see Debru (1997); Vogt (2008); Wilkins (2014). On ancient botany and pharmacology, see Hardy and Totelin (2016); Gazzaniga (2014: 87–108). On ancient medicine, see Nutton (2013b); Mazzini (1997).

2 Galen, *SMT*, ed. Kühn (1826) XI.379–892 and XII.1–377. On Kühn's edition, cf. Nutton (2002).

3 Galen, *SMT in Galeni Opera Omnia* (ed. Bonardus, 1490), 2 vols, available at: www.muenchener-digitalisierungszentrum.de (accessed 30 November 2017); *SMT* (Book 6, fols 37vb–99va).

which I have to leave aside in this chapter, have been inventoried by Richard Durling, and, more recently, by Stefani Fortuna.⁴ Within these editions, we find the translation of *On the Capacities of Simple Drugs* prepared and published by Theodoricus Gerardus (Gaudanus), which is the one printed, in the revision made by René Chartier, by Kühn, and studied by Irene Calà.⁵

Before we turn our attention to the work, we have to bear in mind that *On the Capacities of Simple Drugs* is not the sole pharmacological work written by Galen. On the contrary: Galen's pharmacological library consists of several works, among which we find the writings *On the Composition of Drugs According to Places* divided into ten books,⁶ *On the Composition of Drugs According to Kind* consisting of seven books (both works were written around AD 191–2, and became part of a *De compositione medicinarum*),⁷ and *On the Capacity of Cleansing Drugs*.⁸ Among the pharmacological writings of the Galenic corpus, we should also include *On Theriac to Piso* and the *On Antidotes*;⁹ there are two further works ascribed to Galen, that is *On Theriac to Pamphilianus* and *Whom to Purge, with which Cleansing Drugs, and When*, but their authorship is doubtful.¹⁰ However, of all those works, only *On the Capacities of Simple Drugs* was translated into Latin and enjoyed some success during the Middle Ages; another work, the *On the Composition of Drugs According to Places*, became available relatively late (that is, in 1335) through a Latin translation produced by Niccolò da Reggio, but never achieved a considerable diffusion. According to the *Galeno latino* database, only five manuscripts hand it down.¹¹ More successful was, on the other side, the *On the Capacity of Cleansing Drugs*,

4 See Fortuna (Chapter 22) and Savino (Chapter 23) in this volume.

5 Calà (2013).

6 Galen, *Comp. Med. Loc.*, ed. Kühn (1826–7) XII.378–1007 and XIII.1–361.

7 *Comp. Med. Gen.*, ed. Kühn (1827) XIII.362–1058. *According* to McVaugh (1975: 13), the work was rendered from the Arabic into Latin by an unknown translator and enjoyed a very limited success under the title of *Liber Katagenarum* (incipit: 'Inquit Galienus: iam retuli alibi virtutes medicinarum simplicium' [eThK 0748D]). It is transmitted, for example, by the manuscripts Paris, BnF, lat. 6865 and Palatinus lat. 1310.

8 Galen, *Purg. Med. Fac.*, ed. Kühn (1826) XI.323–342 = ed. Ehlert (1960).

9 Galen, *Ther. Pis.*, ed. Kühn (1827) XIV.210–94 = ed. Boudon-Millot (2016); Galen, *Ant.*, ed. Kühn (1827) XIV.1–209.

10 Galen, *Ther. Pamph.*, ed. Kühn (1827) XIV.295–310. Galen, *Cath. Med. Purg.*, ed. Kühn (1826) XI.343–56; the latter treatise is reproduced by Oribasios, *Medical Collections*, 8.23, ed. Raeder (1928) 221.10–227.10.

11 Cf. *Galeno latino*, at www.galenolatino.com (accessed 11 December 2017). The manuscripts are: Cesena, Biblioteca Malatestiana, S.XXVII.4; Fermo, Biblioteca Comunale, MS 5; Vaticanus lat. 2387; Paris, BnF, n.a.l. 1365; Vendôme, BM, MS 108.

translated in the last decades of the thirteenth century (around 1260) by the enigmatic Stephen of Messina, and preserved in fifteen codices.¹²

As far as its place in Galen's literary output is concerned, the beginning of *On the Capacities of Simple Drugs* tells us that Galen explicitly links this text with the theoretical works on the nature and the constitution of natural objects such as the *On the Elements According to Hippocrates* and the *On Mixtures*, which supplied the necessary knowledge to understand the substance and the action of simple remedies, and where he had already discussed some topics such as the role played by elements in the forming of natural objects.¹³ The same connection between the three works is established in the *On the Order of my Own Books*.¹⁴ Galen, however, considered such knowledge to be completed by a necessary interaction with a work on medical practice, the *Therapeutic Method*.¹⁵ Furthermore, Galen recommended the physician to be aware of the differences between the properties of foodstuffs and of simple remedies, even when the same plant could be used in both cases (a 'thorny issue' of medicine and pharmacology that will be examined thoroughly, among others, by Avicenna in the first book of the *Canon of Medicine*¹⁶). In this sense, *On the Capacities of Simple Drugs* is closely connected to another Galenic work, the *On the Capacities of Foodstuffs*.¹⁷ Only after acquiring an adequate knowledge of simple remedies and their use, could the reader deal with compound remedies successfully, and start reading the two works *On the Composition of Drugs* I have mentioned above. Therefore, it is necessary to acknowledge that any study on Galenic pharmacology that does not take into account the complete sequence leading from the knowledge of nature to the correct assessment and use of compound medicine should be deemed to be incomplete. In this chapter on the Latin reception of Galenic pharmacology, however, I can only deal with *On the Capacities of Simple Drugs*, for it is the most successful work of the Galenic pharmacological corpus in the Western Middle Ages, and the one showing the most complex textual history.

The history of the origin, the manuscript tradition, and the reception of *On the Capacities of Simple Drugs* in the three main languages and cultural milieus in which the work was read and used – Greek, Arabic, and Latin – is still

12 Fortuna (2012).

13 SMT 1.1, ed. Kühn (1826) XI.381.

14 Galen, *Ord. Lib. Prop.*, ed. Kühn (1830) XIX.56 = 2.10, ed. Boudon-Millot (2007) 93–4. Cf. also Galen, *Lib. Prop.*, 6.1–4, ed. Boudon-Millot (2007) 155–6.

15 Galen, SMT, 1.1, ed. Kühn (1826) XI.379.

16 Avicenna, *Liber canonis*, 1.2.2.1.15 (1507: fols 33va–34va).

17 Galen, *Alim. Fac.*, ed. Kühn (1823) VI.453–748 = ed. Wilkins (2013). On the connection between food and medicine in Galen's oeuvre, see Wilkins (2015).

to be written. Only few studies have been devoted to the manuscript tradition of the Greek original text, most recently, by Caroline Petit, who is preparing a new critical edition that will finally substitute Kühn's.¹⁸ On the other hand, the Arabic tradition and the Syriac and Arabic translations that constitute it have been the object of several studies by Manfred Ullmann, Peter Pormann, and, more recently, by Grigory Kessel, Siam Bhayro, and Pormann, who have re-designed the steps of the Eastern reception thanks to the discovery of a Syriac Galen Palimpsest preserving books 6–11 of the Syriac translation made by Sergius, previously supposed to be lost.¹⁹ Finally, the Latin translation is, to the present day, the one that attracted the least attention. Apart from the data collected by Petit,²⁰ the allusions made to it by the scholars working on the translating activity of Gerard of Cremona and Niccolò da Reggio,²¹ and the mentions of the work as a part of the 'new Galen' read and used in the medical curriculum of Paris and Montpellier,²² we practically have no complete overview of the textual history of the Latin *On the Capacities of Simple Drugs*.

In this chapter, I will deal with the history of the text and the reception of its Latin version(s). More concretely, I will deal with: (1) the high medieval indirect knowledge of Galen's pharmacology; (2) the first, partial, Arabic-Latin translation made during the twelfth century by Gerard of Cremona and its reception within the so-called 'new Galen' in Paris and Montpellier; (3) the 'indirect knowledge' of Galenic pharmacology via the Arabic-Latin translations of medical works during the thirteenth and fourteenth century; and (4) the second, complete, Greek-Latin translation made during the first decades of the fourteenth century by Niccolò da Reggio.

2 Before Gerard of Cremona: the Graeco-Latin Reception, and the Role of the Indirect and 'Spurious' Galen (Sixth–Twelfth Century AD)

In antiquity, *On the Capacities of Simple Drugs* appears to have been only accessible in Greek. During Late Antiquity, it seems to have been slowly pushed aside by newly available compendia and encyclopaedias that were easier to access and peruse. Another factor was that, at least in the Western part of the dissolving Roman Empire, Greek was no longer widely understood.

18 See Petit (2009; 2010; 2013a).

19 On the Syriac Galen Palimpsest, see Bhayro (Chapter 8) in this volume.

20 See Petit (2009; 2010; 2013a).

21 On Niccolò da Reggio, see below, section 4.

22 On the 'new Galen', see below, section 3.3.

2.1 Oribasios, *Euporista*; Ps.-Theodore, *De simplicibus medicinis*; *Alphabetum Galeni ad Paternum*; *Dynamidia*

Late-antique encyclopaedias and compendia were very important for the indirect transmission of *On the Capacities of Simple Drugs*.²³ Some of these then had a major impact on the West when they were translated into Latin.²⁴ Within the Latin corpus attributed to Oribasios, of which we know two different translations and traditions (*La* and *Aa*),²⁵ we find a work in three sections bearing the title *Euporista*, whose book 2 encompasses a collection of around eighty *medicamina simplicia* arranged according to the alphabetical order.²⁶ This work has been considered as a Latin version of book 15 of Oribasios' Greek *Medical Collections*, and as depending upon books 6–11 of *On the Capacities of Simple Drugs*. According to Klaus-Dieter Fischer, however, the situation is more complicated, for the *Euporista* appears to be 'longer and more detailed' than Oribasios' Greek original, and therefore we must consider the possibility that, at least in some sections, some information was derived directly from Galen. The two translations are commonly dated to the sixth century and located in Ravenna, although the possibility that they were produced in North Africa has been considered, too. The work only enjoyed a limited success, since it is preserved, in the two Latin versions, in ten manuscripts, none of which is dated after the twelfth century, with the peak of its diffusion being concentrated around the ninth century.²⁷

If the *Euporista* can be considered as the main source for the transmission of Galenic pharmacological material within high medieval Western culture, other texts should by no means be forgotten. Among which, we count the collection *De simplicibus medicinis* attributed to the ps.-Theodore and published in 1894 by Valentin Rose in his *Gesamtausgabe* of the works of Theodore Priscianus on the basis of the unique manuscript known so far, the Cod. Sang. 761.²⁸ Although practically unknown during the Middle Ages, the work deserves attention, for, as noticed by Petit, it does not seem to reproduce the content of *On the Capacities of Simple Drugs* in full, but to show some 'noticeable

23 On Galen's influence on Byzantine pharmacology, and on the role played by Oribasios and other medical collections in the development of this branch in knowledge, see Scarborough (1984). On Byzantine medicine, cf. Temkin (1962).

24 Cf. Vázquez Buján (2007: 2012a; 2012b); Fischer (2013: 688–9).

25 Cf. Buzzi and Messina (2014).

26 This work can be read, for instance, in the collection known as *Experimentarius medicina* (1544), where it follows Hildegard of Bingen's *Physica*, and becomes part of a miscellany *De simplicium virtutibus, quae medicis praecipue in usu sunt, libri V*.

27 On the manuscript tradition of Oribasios' works, cf. Beccaria (1956); Wickersheimer (1966); Fischer (2013).

28 Ps.-Theodore, *De simplicibus medicinis*, ed. Rose (1894) 403–23.

differences'.²⁹ Further deeper analyses and textual comparison are required in order to establish the connection between the three works, and the extent of the ps.-Theodore's dependence upon Galen and Oribasios. Another spurious Galenic text that enjoyed a certain reputation during the Middle Ages and the Renaissance is the *De virtute centauree*, a short pharmacological treatise on the virtues of the plant to be referred to the Methodist school, whose edition is being prepared by Vivian Nutton.³⁰

The 'indirect' knowledge of Galenic pharmacology in the first centuries of the Middle Ages was not limited, however, to the works derived from, or inspired by, *On the Capacities of Simple Drugs* and its direct epigones. Equally important are texts that were falsely attributed to Galen and became part of the tradition. Here, I will exclusively deal with two rather puzzling sources that circulated, together or separately, with an attribution to Galen at least until the twelfth century AD: the *Alphabetum Galeni ad Paternum* and the *Liber de dynamidiis*.

Recently edited by Nicholas Everett on the basis of eight surviving manuscripts, the *Alphabetum* is an alphabetical collection of 301 medical remedies (mostly plant-based) that does not bear any connection with Galen at all.³¹ It was written before the eighth century AD, which is the dating of the oldest manuscript, Palatinus lat. 187.³² According to Everett, the collection cannot be referred to any clear source, but draws on a large variety of sources stretching from Dioscorides and Pliny the Elder (perhaps, through the use of a common source, the lost work of Sextus Niger) to the *Diaeta Theodori* and the pseudo-Apuleian *Herbarium*. How far those parallels and echoes stretch, and how precisely the compilation and reception of the text unfolded, is hard to say as more research is needed. Here, I can only point, following Fischer's suggestions, that it was used to compile the *Dioscorides alphabeticus*, or, better said, to enrich the *Dioscorides langobardus*, as the collection offered the Dioscoridean

29 Petit (2013a: 1067–8).

30 Nutton (2014).

31 *Alphabetum Galeni*, ed. Everett (2012). In his article 'Drugs to declare. A fresh look at some works with pharmaceutical content attributed to Galen' (originally presented at the International Conference 'Pseudo-Galenic Texts and the Formation of the Galenic Corpus', London, 14–15 May 2015, and accessed via <https://uni-mainz.academia.edu/KlausDietrichCloudyFischer>, now apparently retrieved), Klaus-Dieter Fischer draws the scholars' attention to a manuscript unknown to Everett, the codex Edinburgh, National Library of Scotland, Advocates 18.5.16 (twelfth century), challenges the dating of the work (according to Bischoff, the oldest manuscript dates back to the eighth century), and emphasises several methodological mistakes in the editing.

32 Description and digital version at http://bibliotheca-laureshamensis-digital.de/bav/bav_pal_lat_187 (accessed 30 November 2017).

material that was used to build the basis of the alphabetical collection, with material derived from other sources.³³ Therefore, the text may still have enjoyed some success and been considered as authoritative during the eleventh century. At any rate, albeit not being 'Galenic', the *Alphabetum* was considered to be a genuine Galen product, and was transmitted in manuscript medical corpora written especially in Italy between the ninth and the eleventh century.

Finally, we should mention two other 'spurious' writings circulating during the Middle Ages under the name of Galen, the *Dynamidia* or *Liber de dynamidiis*. The first of them consists of a list of twenty-one classes of drugs defined according to their actions, of a short definition of the origin of simple remedies (plants, animals, etc.), a short summary of the action performed by the senses to recognise the *potentiae* of substances, some definitions of contraries and combination of ingredients, and some notes on the incurability of some illnesses.³⁴ It is transmitted together with the *Alphabetum Galeni* in four manuscripts, but could be copied independently, and in various forms.³⁵ The second text is longer and more patchwork-like, handed down by six late medieval (thirteenth–fifteenth century) manuscripts, and formed by a conflation of the pseudo-Hippocratic *Epistle on Maecenas* and forty-five chapters offering: (1) some lists and classifications of medical remedies according to primary and secondary qualities and therapeutic properties; (2) a collection of purgative medicines; and (3) a small *practica medicinae* or manual of pathology incorporating an independent work on urine and the pulse.³⁶ The two *Dynamidia* were conflated together in the printed tradition, that is in the edition published by Pietro Antonio Rustico in Pavia in 1515–16, and above all in the Chartier edition from 1679, where it is printed as the second book of the *Dynamidia*, the first one being the first text, albeit in fragmentary form.³⁷ Of the two texts, only the first is of interest for our purpose; first because of its early dating – the second one being diffused only from the thirteenth century onward – and second, because it seems to be connected explicitly with the *Alphabetum* in its prologue, where a *liber omnium pigmentorum intellectum et qualitatem et effectum* is mentioned.

33 Cf. e.g. the entry 'Avena' (Everett 2012: 168–9, no. 31); cf. *Dioscorides alphabeticus* (1478) fol. 18va; digital version at www.muenchener-digitalisierungszentrum.de, (accessed 30 November 2017), or 'Andrachne' (Everett 2012: 169, no. 32); cf. *Dioscorides alphabeticus* (1478) fol. 20rb.

34 Everett (2012: 18–21, esp. 19). On these works, cf. Fischer (2013: 684–7).

35 Everett (2012: 18, n.36).

36 Digital version available at www.e-codices.ch (accessed 30 November 2017).

37 On the manuscript tradition of these works, see at *Galeno latino*, www.galenolatino.com (accessed 30 November 2017), *ad locum*.

2.2 The Corpus of Constantine the African's Translations (Al-Majūsī, *Pantegni*; Ibn al-Jazzār, *Liber de gradibus*)

It is indeed very likely that some references to Galen's pharmacology and, more specifically, to *On the Capacities of Simple Drugs* may have reached Western medicine even before Gerard's translation via two Arabic works translated by Constantine the African, al-Majūsī's *Pantegni* and al-Jazzār's *Liber de gradibus*.³⁸ Al-Majūsī's *Pantegni* was written in the second half of the tenth century, and consists of twenty books divided into two sections, a theoretical (*Theorica*) and a practical (*Practica*); the first deals with the basic principles of medical theory (e.g., anatomy, physiology, and pathology), the second with therapeutics (e.g., pharmacy, therapy, surgery). The reconstruction of the origin and the transmission of the work has been a difficult task, claiming the energy and the competences of several scholars.³⁹ Particularly complicated is the reconstruction of the development of the *Practica*, which was not translated by Constantine in full, but is the result of the insertion of several pieces of various origin, a task performed by some of Constantine's collaborators, and by some later authors. Pharmacology is the object of the second book of the *Practica*. In the Arabic original it was divided into two sections, a first one summarising the basic principle of the theoretical pharmacology, and a second one describing the properties of simple remedies according to their origin.⁴⁰ The Latin translation is, in turn, the result of the conflation of three independent sections: (1) a *De probanda medicina* in thirty-four chapters translated by Constantine the African, that corresponded to the first section of the Arabic original; (2) a *De simplicibus medicina* that may correspond to what follows the *De probanda medicina* in the Arabic original, or, at least, to the text translated from the Arabic by Stephen of Antioch, and describing the properties of simple medicines according to their origin (vegetal, mineral, animal), and their properties (esp. purgatives); and (3) al-Jazzār's *Liber de gradibus*. This text was written by al-Jazzār in the second half of the tenth century; it describes approximately 280 simple remedies, emphasising their Galenic qualities – but not, as it is commonly repeated, their *gradus* ('degree') or position within the Galenic system – and their medical properties. Translated into Latin by the same Constantine, it enjoyed wide success as a treatise *de materia medica* throughout the Middle Ages, and was probably attached to the *De probanda*

38 Al-Majūsī, *Pantegni*, *Practica II*, and Ibn al-Jazzār, *Liber de gradibus*, both in *Opera Ysaac* (1515), second section of the volume, fols 65ra–86rb.

39 On the reconstruction of the *Pantegni*, see the collective volume Burnett and Jacquart (1994a). Cf. also Veit (2006); Burnett (2013).

40 Ullmann (1970: 267–8).

medicina in order to integrate the first section with a description of medical properties of *simplicia* before the *De simplici medicina* was translated, incorporated, and diffused.

As far as the *Pantegni* is concerned, it is interesting to notice that the two sections of *Practica Pantegni* II that were translated from al-Majūsī's Arabic original (*De probanda medicina* and *De simplici medicina*) do not include any single open quotations of Galen (such as 'ut dicit Galenus', 'secundum Galenum'); a strange absence, if we consider that Hippocrates is quoted a few times, and that both Hippocrates and Galen occupy a prominent place in the Prologue of the work.⁴¹ Perhaps he used Galen indirectly, via other sources, and/or that he did not consider it necessary to refer to Galen openly, because he considered *On the Capacities of Simple Drugs* too complicated in comparison with the clear, accessible, and user-friendly overview he intended to offer to his readers, or because he had other sources at his disposal. Whatever the reasons are for the absence of open quotations of Galen's pharmacological works, it is clear enough that al-Majūsī's pharmacology shows an evident Galenic imprinting, as demonstrated by the theory summarised in chapter 4, according to which the thick or rare consistence of the remedy determines the speed or the slowness of its transformation within the body and its reaction vis-à-vis its internal warmth, which recalls, in a shortened and, maybe, clearer form, the content of chapters 10–15 of book 1 of *On the Capacities of Simple Drugs*.⁴² Therefore, we can venture that at least a general idea of the theoretical frame of Galenic medicine was accessible indirectly via the second book of the *Practica Pantegni*, albeit without explicit mention of Galen's work.

The situation is different for the *Liber de gradibus*, as al-Jazzār does not only use Galen extensively, together with Dioscorides, Paul of Aegina, Rufus of Ephesus, Ibn Juljul, and other authors,⁴³ but also openly points in his Prologue to the pivotal role played by Galen and the *On the Capacities of Simple Drugs* both in correcting previous imprecisions and in providing a set of rules, a theoretical frame of pharmacology, to which all authors agreed afterwards. As far as the first aspect is concerned, Galen contributed decisively toward a rational and coherent definition of the 'quantitas graduum' (that is, of the intensity of the effect) and a correct interpretation of the 'complexio medicinarum', two aspects of pharmacological theory that had been left unexplained

41 Cf. Ullmann (1970: 141 on the mention of Galen in the Arabic Prologue, and 47–8, no. 49, on the influence of *On the Capacities of Simple Drugs* in the Arabic world). On al-Majūsī's Prologue and on its 'manipulation' in Constantine's translation, cf. Jacquart (1994a). Cf. also Chipman (Chapter 16) in this volume.

42 Al-Majūsī, *Pantegni Practica*, 2.4, in *Opera Ysaac* (1515) fol. 65vb.

43 On Ibn al-Jazzār's sources, cf. Ullmann (1970: 269).

(or insufficiently explained) by previous sources, such as Dioscorides.⁴⁴ Henceforth, Galen's influence and centrality in al-Jazzār's idea of pharmacology cannot be denied. We can therefore argue that the *Liber de gradibus* seems to respect the general evaluation of the nature and the therapeutic properties of the two plants provided by Galen, if not the single therapeutic employments. Thus, we can imagine that, at least in the domain of pharmacology, the Constantinian translation and its Arabic original did act as conveyor of Galenic information. The same may be said, by the way, for al-Majūsī's section *De simplicibus medicina*, which shows, both in case of aloe and absinth, a strong Galenic imprinting.⁴⁵ Nevertheless, our evaluation of the role played by the second section of al-Majūsī's *Practica Pantegni* II cannot be the same as in case of the *Liber de gradibus*, as there is no evidence of knowledge and use of *De simplicibus medicina* in twelfth- and thirteenth-century pharmacological writings, nor of its transmission within the *Practica Pantegni* before the end of the twelfth century. Therefore, even if we cannot deny that *De simplicibus medicina* did hand down Galenic pharmacological content, we cannot say that the work was perceived and used in this capacity.

3 Gerard of Cremona's Arabic-Latin Translation and its Impact: Manuscript Tradition, Connection to the 'new Galen', Reception in the Academic Milieu; the Indirect Tradition: Avicenna as Conveyor of Galenic Pharmacology

The *On the Capacities of Simple Drugs* owes its reception and assimilation in the Arabic cultural world to two translations: a first, complete, from Greek into Arabic, produced by Ḥunayn ibn Isḥāq; a second, chronologically anterior to Ḥunayn's, attributed by Ullmann to al-Biṭrīq, and preserved only in a fragmentary form comprising book 6 (although we cannot exclude that al-Biṭrīq produced a complete translation).⁴⁶ The Arabic reception is closely related to the Syriac one: according to Ḥunayn's biography (*Risālah*), the first five books of *On the Capacities of Simple Drugs* were translated from Greek into Syriac by Yūsuf al-Ḥūrī and Ḥunayn, whereas a second part (books 6–11) was rendered into Syriac by Sergius of Resh 'Aina and the same Ḥunayn. However, the

44 Constantine the African, *Liber de gradibus, Prologus*, in *Opera Ysaac* (1515) fol. 78rab, here esp. fol. 78ra.

45 Al-Majūsī, *Pantegni Practica II, De simplicibus medicina*, in *Opera Ysaac* (1515) fols 72ra and 76vb (s.v. 'Aloe'), and fols 67va and 77rb (s.v. 'Absinthium').

46 On the role of translations in the development of Arabic pharmacology, cf. Pormann (2001). Review of all Syriac and Arabic versions of *SMT* in Ullmann (2002: 15–51).

sole manuscript supposed to preserve Sergius' translation, the codex London, British Library, MS Addit. 14661, only handed down books 2–8. The recent discovery of the so-called 'Syriac Galen Palimpsest' has changed the picture radically, as the scholars involved in the deciphering of the palimpsest have pointed out to the presence in this witness of the whole second part (books 6–11) of the Syriac text. In this chapter I will not examine the intricacies of the Arabic tradition of *On the Capacities of Simple Drugs*; I only recall its complexity to remind readers that the Arabic manuscripts and textual traditions handing down the text to the Latin translator(s) did not produce a unique text, but more a collection of different traditions. Before continuing with the discussion of those traditions, it would be worthwhile to recall some basic characteristics of Galen's role in the history of Arabic pharmacology.

Within the development of Arabic medicine and pharmacology, Galen's contribution is mostly identified in the establishment of a strong theoretical framework, in the attempt to order the array of substances that were at physicians' disposal, and to restructure the large and chaotic system of classification of therapeutic properties set by Dioscorides around the range of the primary qualities and their degrees of intensity. Furthermore, Galen became the second most important authority of Arabic pharmacology together with Dioscorides; both their statements and opinions with reference to the properties of simple remedies were made objects of compilation and comparison in collections of *materia medica* such as Ibn al-Baytār's or Ibn Wāfid's works, both bearing the title *Kitāb al-Adwiyā al-mufrada*.⁴⁷ Both tendencies in the approach and treatment of Galenic pharmacological lore were later received, at least indirectly, by the Western world, via the Latin translation of al-Majūsī, Avicenna, and the pseudo-Serapion *Liber aggregatus in medicinis simplicibus* (which is nothing but the translation of Ibn-Wāfid's work). We will return to that later. Now, let us devote attention to Gerard's translation of *On the Capacities of Simple Drugs*, and to the main open questions related to it.

We now possess a better overview of Gerard's translations and of his translation technique.⁴⁸ Generally speaking, his translations are characterised by the presence of: (1) various stages of redaction and revisions; (2) some 'Arabisms' and transliterations of Arabic words he could not, or would not, translate into Latin, or whose Latin equivalent was not available; and (3) some specific 'syn-categoreumata' such as 'quod est quia' or 'illud est quia'. Such characteristics

47 On the Arabic collections of *materia medica*, cf. Pormann (2001); Pormann and Savage Smith (2007: 51–5, 77, nn.13–19). See also Chipman (Chapter 16) in this volume.

48 On Gerhard's translations, cf. Colomba (2014), with further bibliography, and Schiavetto (2000). On Gerard's translation technique, cf. McVaugh (2009).

have been often emphasised, but never tested with the help of *On the Capacities of Simple Drugs*. Therefore, it is interesting to devote our attention to Gerard's translation and its characteristics, before continuing our discussion with an examination of its manuscript tradition, its reception, and its use in the university milieu.

3.1 Gerard's Translation of *On the Capacities of Simple Drugs*: Some Considerations on the Arabic Model, the Translation Technique, and the Question of the Attribution of Book 6

Gerard's translation of *On the Capacities of Simple Drugs* has not been extensively studied. Only Petit has devoted a few pages to it, mainly to assess its lack of usefulness to establish a reliable Greek text.⁴⁹ Otherwise, no in-depth analysis has been devoted to this text and its characteristics, to its Arabic textual source, or to its connection to the rest of Gerard's literary output. Let us summarise the state of the question. First of all, it should be recalled that *On the Capacities of Simple Drugs* did not belong to the Alexandrian canon, but was perceived and translated both by Sergius and by Ḥunayn as an addition to it. Therefore, we should take into account that, without this 'certified' status, the transmission and the diffusion of *On the Capacities of Simple Drugs* might have become more complicated. If we add to that the complex network of circulating Arabic and Syriac translations, no one of which always in a regular and complete form, we may imagine that Gerard's translation also suffered the consequences of such troubled transmission. Second, we should recall that Gerard's translation is not a complete one, but only includes a part of the work. The common conception that it included books 1–6 is not necessarily correct. Book 6 is transmitted by few manuscripts, and in one case, the codex Palatinus lat. 1094, independently. This raises the suspicion that book 6 was not translated by Gerard but by somebody else, and only later, and somehow hesitantly, attached to the rest of the text.

We may assume that Gerard had an incomplete copy at disposal; it is not very probable that he would stop translating while dealing with the books describing the *medicamina simplicia*, as we do not know of other cases in which Gerard consciously left aside a text he was rendering into Latin. The hypothesis that he translated what he had on his desk may be corroborated by a panorama of the Arabic manuscript tradition, which is small and mostly consisting of incomplete copies. Therefore, we may conclude that, if it is easy to explain why Gerard could only translate books 1–5, it is difficult to find out which segment of the Arabic manuscript tradition was at the origin of the translation of

49 Petit (2013a: 1069–74).

book 6. Therefore, we may argue: (1) that Gerard translated books 1–5, and another translator whom we cannot identify rendered book 6 into Latin, maybe as a part of a larger project to produce a Latin version of books 6–11 that he could not achieve; (2) that he first translated books 1–6, and later started working on books 6–11, but for unknown reasons he had to stop at the end of book 6; (3) that the person who translated book 6 was a member of Gerard's entourage. With that hypothesis in mind, we can now turn our attention to the enigma of the 'two translators'.

As I have already pointed out, Gerard's translation only covers the first section of *On the Capacities of Simple Drugs*, which discusses the basic principles of pharmacology. There is no certitude, however, about the extent of such a 'section', which could comprise either books 1–5 or books 1–6. The Latin manuscripts are not much help as they provide different combinations; the majority only preserve books 1–5. The sole exceptions are the codices Leipzig, UB, 1136, Paris, BnF, lat. 9331, Palatinus lat. 1094 and Vaticanus lat. 2385 (the manuscript Vaticanus lat. 2376 containing only a fragment of the beginning of book 6). In all of them, book 6 presents as a part of *On the Capacities of Simple Drugs*. The only manuscript showing a different status of book 6 is the Palatine, as it is the sole witness of an independent transmission of a text that seems to have been considered by the scribe as a self-contained work. A more confusing picture is finally offered by the first printed edition supervised by Diomedes Bonardo (Venice, 1490), where books 1–5 derive from Gerard's translation, book 6 from Gerard's (or the anonymous) one, and books 7–11 from Niccolò da Reggio's Greek-Latin version. The textual context shown by the Venice print is a bizarre patchwork that can only be related to the manuscript Paris, BnF, lat. 9331, a codex we will discuss in the next paragraphs.

The relative rarity of the translation of book 6, as well as the problematic form of transmission shown by the Palatine manuscript may support the hypothesis that Gerard was not the translator of book 6, and that its connection to the rest of *On the Capacities of Simple Drugs* was established later, and was not acknowledged by the manuscript tradition. Another proof against Gerard's authorship is represented by the item forty-nine of the list of works attached to his *Vita*, where Gerard is credited to have translated only five books of *On the Capacities of Simple Drugs*: '*Liber Galieni de simplicibus medicina tractatus V*'.⁵⁰ The verdict seems clear: somebody else translated book 6. However, we cannot exclude Gerard or someone of his entourage without looking for more evidence pro or contra Gerard as a translator. In order to do that, we have to take into consideration some stylistic and lexicographic features of the

50 Burnett (2001: 279).

Latin version. First of all, we notice that our translation respected Ḥunayn's version.⁵¹ By doing that, he also kept its flaws, namely the lack of reproduction of the original Greek alphabetical order, and does not attempt at complying to the needs of the Latin-speaking reader, who probably could not easily search through the content of the book.⁵²

As far as the botanical nomenclature is concerned, we notice that our translator shares some features with Gerard's *modus operandi*, and used the same Latin equivalent for the Arabic nomenclature. Should we think that book 6 was an earlier translation, made when Gerard was not as acquainted with Arabic botanical nomenclature as he was while translating the *Liber canonis*? It seems hard to believe. Therefore, the only conclusion we may reach is that both translators behaved in the same way (transliteration of the Arabic word, followed by a Latin equivalent acting as a sort of explanatory gloss, or, when the identification seems certain, direct translation into Latin, without any trace of the Arabic left), and used the same strategies, albeit with some inconsistencies with reference to their specific choices. Therefore, even if the translator of book 6 was not Gerard, he might have been somebody belonging to his circle, and employing the same techniques.

If we now turn to the last aspect – the stylistic and syntactic features – we must content ourselves with few details provided by the conjunction phrases, to be analysed according to the frame and the chronology of Gerard's translation provided by Michael McVaugh.⁵³ The analysis of those features shows that the anonymous translator behaves similarly to the person who translated al-Kindi's *De gradibus*, whose Latin text, although attributed to Gerard's translation programme, might have been the work of 'a particular assistant who had only limited involvement to the program'.⁵⁴

3.2 Avicenna as a Conveyor of Galenic Pharmacology

Among authoritative pharmacological texts,⁵⁵ we can easily consider another, and much more diffused, translation produced by Gerard, the one that put a

⁵¹ Ullmann (2002: 41–2).

⁵² An example of this uncertainty, both in the identification of the plants and in the reconstruction of the chapter sequence reflecting the Greek original, can be found in the sporadic glosses accompanying the text in the Palatine manuscript that provide a translation of the Greek name (e.g., on fol. 555ra), perhaps with the help of the Greek-Latin translation, or with some other pharmacological collections including Greek nomenclature, such as the *Dioscorides alphabeticus*.

⁵³ McVaugh (2009).

⁵⁴ McVaugh (2009: 106–7).

⁵⁵ Among those texts, a certain role might have been played by Serapion's *Breviarium*, whose book 7 is devoted to the compound drugs and the rules to prepare them. Although aware

major medical work, Avicenna's *Canon of Medicine*, at the disposal of Western readers.⁵⁶ The meaning and the success of Avicenna's work as a major reference book of medicine has been widely acknowledged. For our purpose, it suffices to recall that the *Canon of Medicine* encompasses all branches of medicine and devotes a whole book, the second, to pharmacology. The choice to deal with pharmacology in the second book immediately after the first, where the basic principles and notions of medicine are outlined, is not made by chance, for the perfect knowledge of nature and its theoretical fundamentals (e.g., the physiologic theory of *complexio*, and the determination of the effects of natural substances on the human body) represents, in Avicenna's opinion, the ideal basis for the right use of medical remedies derived from natural substances in therapy. Book 2 of the *Canon of Medicine* consists of two sections (*tractatus*), the first of which can be defined as 'theoretical', and the second as 'descriptive'. According to that division, the first treatise gives, in six large chapters, a summary of the theoretical background of pharmacology, and deals with questions such as the right knowledge of the complexion of simple remedies, the right methods to ascertain the properties of simple medicines in both an 'experimental' and a 'rational' way, or the correct way to define such properties according to the basic qualities, the general effect on the human body, and the specific action on one of its parts. On the other hand, the second treatise is a large alphabetical collection of natural remedies and their properties, consisting of 752 chapters, where each substance is described in its qualities and therapeutic effects, in general, on various organs of the body, and against specific illnesses such as eye diseases, tumours, fevers, etc.

Book 2 of the *Canon of Medicine* represented, because of its largely Galenic background, an ideal conveyor of Galenic pharmacology, and, in all probability, a better one compared to Gerard's incomplete translation of *On the Capacities of Simple Drugs*. First of all, it offered both pharmacological theory and practice, that is an ordered survey of the theoretical background of the branch of knowledge and a coherently structured and well-ordered description of the simple remedies. However, we should ask how Galenic Avicenna's pharmacological account is, that is how large is Galen's influence on book 2 of the *Canon of Medicine*, and how much it contributed to the spread of Galenic pharmacology. Generally speaking, we know that Avicenna did not only carry out his personal studies of Galen's works and achieve his own view of Galen's medical thought, but, by doing that, could offer a better, more ordered, outline of

of the importance of this text, I do not deal with it here because its Latin reception and influence have not been studied in depth.

56 On Avicenna's pharmacology, see Paavilainen (2009); Ayari-Lassueur (2012).

Galen's medicine, which made him the best interpreter and conveyor of Galen throughout the Middle Ages, at least until the Renaissance.⁵⁷ In this capacity, Avicenna was one of the main medical writers who opened up the path for the reception of Galenic medicine in late medieval universities, and contributed to the birth of scholastic medicine; and that, despite of the fact that the work took a long time to affirm itself as a medical manual, as Danielle Jacquart has shown on the basis of the Parisian University lectures and programmes, in whose context Avicenna was included only from 1270–4 onwards.⁵⁸ As for pharmacology, we may notice that, according to Ullmann, Galen is the second most quoted source in the pharmacological section of the *Canon of Medicine*, the first being Dioscorides; nevertheless, whereas the latter is mentioned 'very often' (*des öfteren*), Galen is only referred to 'occasionally' (*gelegentlich*).⁵⁹ We have no reason to doubt that such quotations are of first hand, but, lacking an encompassing study of the sources of the medical manual, we cannot exclude the other texts may hide behind a reference to Galen, especially if we consider that Arabic pharmacology was already far advanced (which meant that Avicenna had several sources at his disposal⁶⁰), and that Galen's authority was well established, as shown by later collections of quotations taken from Galen, Dioscorides, and other sources written with the aim to gather together and put at readers' disposal the most relevant information transmitted by such acknowledged authorities. With that in mind, and without any intention to be exhaustive, let us try to detect at least traces of Galen's *On the Capacities of Simple Drugs* in the second book of the *Canon of Medicine*, and to identify some information ultimately derived from Galen that Avicenna would contribute to transfer into Western medical culture.

We can summarise the situation as follows. While describing the characteristics of specific substances, Avicenna does not seem to have been influenced by the Greek physician, neither on a theoretical, nor on a practical level. Now, no matter whether Avicenna was indeed an 'orthodox follower' of Galenic pharmacology or not, it is now time to ascertain whether he was perceived as a Galenic pharmacologist. The answer to that question is, at least with respect to the descriptive pharmacology of the second treatise, negative, as I was not able to find any case that seems to point to a reception of Galen's descriptive

57 On the role played by Avicenna in Medieval universities, see Siraisi (1973; 1981; 1987; 2001); Jacquart (1997; 1998; 2002); Hasse (2016); Chandelier (2017).

58 Jacquart (2002).

59 Cf. Ullmann (1970: here 271–2, esp. 271). Ullmann recalls, for instance, the presence of quotations in Avicenna, *Liber canonis*, 1.125.16; 130.17; 131.21; 134.23; 137.7; 138.16; 139.12–13; 142.23 (1877).

60 On Avicenna's sources, see the overview in Veit (2011).

pharmacology mediated by Avicenna in Latin medical and pharmacological literature. In other terms, I cannot find any evidence that treatise 2 of book 2 of the *Canon of Medicine* acted as a conveyor of pharmacological information as a substitute of the 'original' Galen, neither because it followed the Greek source faithfully, nor because it was at the bottom of possible second-hand references and quotations '*ut dicit Galenus/secundum Galenum*' that could ultimately come from it.

The results are different when we turn our attention to the first treatise, where the theoretical background of pharmacology is summarised in six large chapters. Thanks to the studies of Jacquart, we now know that Avicenna played a decisive role in establishing the basis of scholastic, Galen-oriented, pharmacology;⁶¹ his major contribution could be identified in the clarification, the re-organisation, the systematisation, and the further expansion and development of the theoretical fundamentals of the Galenic pharmacology that had been expressed in a somehow unclear and unsystematic fashion in *On the Capacities of Simple Drugs*, as well as in the emphasis of some concepts that had been emanated by Galen, but whose high meaning was somehow missing in the context of Galen's account, as shown by Avicenna's reception of Galen's concept of *complexio* and of rational experience, and by Avicenna's role in conveying to Western medicine Galen's idea of the 'specific form'.⁶² He therefore appears to be, as Jacquart has stated, not just a conveyor of Galen's pharmacological principles, but also a creator of a 'pharmacological Galenic vulgate'.⁶³ By looking at the array of theoretical notions ultimately based on Galen, but re-worked, re-formulated, expanded by Avicenna, that thirteenth-century speculative pharmacology could derive from the *Canon of Medicine*, we may easily infer that the medical manual could act as a conveyor of Galenic theories, and therefore integrate, or perhaps, even substitute, the reading of the original work.

3.3 *On the Capacities of Simple Drugs*, the 'new Galen', and the University Milieu

3.3.1 Manuscript Transmission

Galen's *On the Capacities of Simple Drugs* is handed down, in Gerard's translation, by fifty-four manuscripts, most of which only preserve books 1–5.⁶⁴

61 Cf. Jacquart (2006).

62 On these aspects of Galen's pharmacology, see Chandelier and Robert (2013); van der Eijk (1997); Pormann (2013); Jacquart (2002: 320); Weill-Parot (2013).

63 Jacquart (2002: 317).

64 All manuscripts are described, with few exceptions, in the database *Galeno latino*, at www.galenolatino.com (accessed 11 December 2017).

The manuscript tradition of Gerard's translation supplies ample and interesting information about the chronological stages and the types and contexts of diffusion of the work. Here, we will focus on the date of the manuscripts, the types of medical anthologies and *corpora* in which it appears and the combined transmission (*Mitüberlieferung*), and the provenance of the codices and the contexts of their production and diffusion. These research strands have recently found a new basis, thanks to Luis García Ballester's seminal studies on the tradition of the so-called 'new Galen'.⁶⁵ Under the name 'new Galen', the Spanish scholar defined a group of Arabic-Latin translations of Galenic works including, among other works, the *On Mixtures*, the *On the Anomalous Dyskrasia*, the *De ingenio sanitatis* (the *Therapeutic Method*), and *On the Capacities of Simple Drugs*. This group of texts, which had not found place in previous Galenic *corpora*, and had not been included in the *Articella*, found its own way in a specific form of manuscript transmission, and its own form of reception, thanks to the contribution of the University of Montpellier, who conveyed their entrance into the medical *curriculum studiorum* and the academic medical background, and to the use made of them by Arnau of Villanova.

First of all, we may stress that a large majority of the manuscripts include *On the Capacities of Simple Drugs* in Galenic miscellanies, or volumes preserving Galenic and pseudo-Galenic writings together. Only a few cases can be mentioned where *On the Capacities of Simple Drugs*, together with other Galenic texts, is included in a mixed corpus connecting Galen to other medical authors and texts, or becomes part of artificial manuscript miscellanies.

The conclusion may be formulated as follows: albeit successful in quantitative terms, Galen's *On the Capacities of Simple Drugs* remains confined within the limits of the *corpora galenica*. It does not live an independent textual life, nor really sets foot into medical culture as a source used to learn or practice medicine, or seems to be able to accompany or to support with its theoretical array other medical or pharmacological texts. This negative conclusion should not prevent us from investigating the ways of transmission of *On the Capacities of Simple Drugs*.

As for the dating of manuscripts, when putting the manuscripts on a chronological line, we notice some interesting characteristics: (1) their production is concentrated between the second half of the thirteenth century and 1350 – such chronological concentration is interesting from many points of view, because of its distance from Gerard's translation (which has not been dated with precision, but cannot have been produced after 1187), and of its closeness to the redaction of Niccolò da Reggio's version; (2) there is a peak in the production of

65 García Ballester (2002).

codices between the end of the thirteenth and the beginning of the fourteenth century; (3) only two noticeable examples – the codices Dresden, SLUB, Db. 93 and Paris, Académie de Médecine, MS 52 – testify to the presence of *On the Capacities of Simple Drugs* in codices preserving Galenic *corpora*, this time in luxury manuscripts, during the fifteenth century.

Such a manuscript transmission implies the presence of a consistent chronological gap between the probable dating of the translation (although we only know a time *ante quem*, but have no knowledge of the exact placement of Gerard's work) and that of the first preserved manuscript. Such a gap is not without consequence, as it leaves us with the unanswered question concerning the destiny of the incomplete Latin *On the Capacities of Simple Drugs* during the first decades after its completion. In actual fact, it seems that Gerard's version of *On the Capacities of Simple Drugs* was neither copied, nor quoted before the last decades of the thirteenth century. Furthermore, it leaves us with a difficult reconstruction of a *stemma codicum* and of a picture of the stages of development of the manuscript transmission of the work.

The high number of manuscripts dating back to the decades between the end of the thirteenth and the beginning of the fourteenth century can lead us towards other considerations. In his study on the diffusion of the 'new Galen', García-Ballester rightly connected the origin and the affirmation of this Galenic textual tradition with the consolidation of medical studies at the Universities of Paris, Bologna, and Montpellier, and with the issue of the 1309 *statuta* of the French university. He also emphasises the role played by Arnau of Villanova as conveyor of Galenic concepts, as well as the similar function performed, on a less speculative scale, by John of Saint-Amand and his *Revocativum memorie*. Now, we can reconsider the matter by examining the provenance of the manuscripts and their connection to the university milieu. Even at first glance, it appears clear that two clusters of production and diffusion of *corpora galenica* including *On the Capacities of Simple Drugs* emerge, the first of which can be linked to the Parisian academic milieu, the second to the north Italian university context, more specifically to Bologna and Padua.⁶⁶ Among them, it is particularly important to recall the Cesena manuscript, written in Bologna toward the end of the thirteenth century, the Parisian codex lat. 9331 that can be ascribed to Paduan context, since it was written and decorated between the end of the fourteenth and the beginning of the fifteenth century for the Abbey of Santa Giustina, and the Parisian manuscript lat. 14389, produced

66 In this sense, the textual history of *On the Capacities of Simple Drugs* presents some interesting points in common with the one of the pseudo-Galenic *On Semen* described by Merisalo (2013).

in Padua (or perhaps Venice), and later owned by the library of the Abbey of Saint-Victor in Paris.⁶⁷

Particularly noticeable is also the witness of the manuscripts Paris, BnF, lat. 15455 and lat. 15456, two manuscripts written either in Bologna or in Padua between the end of the thirteenth and the beginning of the fourteenth century that show the meaning acquired by the 'new Galen' and by *On the Capacities of Simple Drugs* in it from the perspective of both their status of *pecia* manuscripts (a status implying their availability among the acknowledged *exemplaria* preserved by the *bidelli generales* of the university), and of their content, for they reflect in the works preserved by them and their sequence the *curriculum studiorum* we know from the *statuti* of 1405.⁶⁸ Strangely enough, there is no evidence of subsisting southern French manuscripts preserving *On the Capacities of Simple Drugs* in a manuscript miscellany marked by an influence of the 'new Galen'. In other terms, although we are certain of the role played by Arnau of Villanova and the Montpellier university context toward the diffusion and the reception of the 'new Galen', no manuscript witness is preserved to testify it.

3.3.2 The Reception in the Academic Milieu (Paris, Bologna, Padua), and John of Saint-Amand's *Abbreviationes librorum Galieni*

The high number of manuscripts produced in Paris, Padua, and Bologna can be explained by (or, more prudently, are related to) the changes in the *curriculum studiorum* that those three institutions probably underwent between the end of the thirteenth and the middle of the fourteenth century. Such changes can be identified, with Jacquant, with a clear and consistent theoretical turn in medical studies that opened the path to a reception of the medical manuals of Avicenna and of the Galenic writings concerning medical science more than medical practice we can find in the so-called 'new Galen'. Although we have no evidence of the presence of new *statuta* or official documents witnessing the reorganisation of medical studies – as the Parisian *statuta* of 1270–4 do not seem to be aware of the novelty represented by the recently translated Galenic and Arabic-Latin medical corpus, and for Padua and Bologna we have no documents before the Bolognese *statuti* from 1405–6 and the Paduan ones from 1465 – we may recognise the presence of this theoretical turn of medicine and of the role played by the 'new Galen' from the content of the manuscripts produced in loco, and from Galen's influence on the local medical production.

My point of departure for this analysis was the Venice edition published in 1490, where *On the Capacities of Simple Drugs* is printed in volume II, and part

67 On this manuscript, see Jacquant (2010: 216–17).

68 Murano (2004; 2005: 429–41, nos. 249–83: list of Galenic *pecia* manuscripts).

of a cluster structured as follows: the *On the Elements According to Hippocrates* and the *On Mixtures* (aka *De complexionibus*) translated by Gerard of Cremona open the sequence, and are followed by Gerard's translation of the *On Anomalous Dyskrasia* (here known as *De malitia complexionis diverse*), while *On the Capacities of Simple Drugs*, the spurious *Alphabetum Galieni* (cf. section 2.1§ 11.a), and the *On the Capacity of Cleansing Drugs* translated by Stephen of Messina, closes the 'pharmacological section'. The cluster is integrated at the end by the *On the Capacities of Foodstuffs* (aka *De virtute alimentorum*) translated by William of Moerbeke.⁶⁹ The sequence of the works reproduces, in my opinion, a sort of transition, of passage from the scientific and philosophical analysis of the natural objects, their constituting elements, their substance and structure (*complexio*), which provides the basis for the interpretation of their qualities and therapeutic actions, to the principles regulating the use of the same objects as medical remedies, and – finally – to their description. I would therefore argue that this cluster was put together intentionally, and appears to be a consequence of the development of pharmacology into a science based on the observation and study of nature and natural objects that was an evident characteristic of thirteenth-century university medicine, and to which undoubtedly *On the Capacities of Simple Drugs* contributed, either directly, or indirectly, via its influence on Avicenna's *Canon of Medicine*.

The reference to the Parisian academic milieu leads us necessarily to examine the role played by one of its most representative, however enigmatic, personalities, John of Saint-Amand.⁷⁰ Born around 1230 in Tournai, he died in the same town in 1303. His literary production consists of several works, among which is a large *Revocativum memorie*, divided into three sections: the *Abbreviationes librorum Galieni*, where he summarises the content of some Galenic – and Hippocratic, but commented by Galen – works translated from the Arabic belonging to both the 'new Galen' and the *Articella*;⁷¹ the *Concordantie*, a collection of medical definitions ('propositiones notabiles')

69 On this translation and its manuscript tradition, cf. *Galeno latino*, at www.galenolatino.com (accessed 30 November 2017). On William of Moerbeke, cf. Forrai (2015).

70 On John of Saint-Amand, cf. Schallick (1997); Jacquart (1994b; 1998); McVaugh (2011). A provisory list of the manuscripts preserving John's works has been put together by Isabelle Draelants, and published on her 'academia.edu' website, available at https://www.academia.edu/27942329/Liste_provisoire_des_manuscrits_contenant_des_oeuvres_de_Jean_de_Saint-Amand_-_Provisory_list_of_manuscripts_of_John_of_Saint-Amands_works (accessed 30 November 2017).

71 The *Abbreviationes librorum Galieni* have been edited in several dissertations written under the direction of Julius Pagel; cf. Paderstein (1892). The section concerning *On the Capacities of Simple Drugs* has been edited in Reichel (1894: books 1–4) and Matern (1894: book 5).

arranged in alphabetical order; and the *Areolae*, an alphabetic collection of simple and compound remedies and their therapeutic qualities.⁷²

No evidence has ever been found of John's teaching activity in the Faculty of Medicine in Paris, but there is no doubt that his work reflected the changes and updates of the medical curriculum that were taking place in this university in the second half of the thirteenth century, and possibly helped in shaping such a curriculum. These changes and updates are also reflected by the role played by *On the Capacities of Simple Drugs* in his pharmacological works, especially in the *Areolae* (the work opens with a quotation from the first book concerning the necessity of knowing the properties of the *simplicia* before using of the *composita*),⁷³ in the *Concordantie*, and in the *Expositio super Antidotarium Nicolai*.⁷⁴ Needless to say, he offered a summary of its content in the *Abbreviationes librorum Galeni*, to which I will return presently.

Although John was undoubtedly well acquainted with *On the Capacities of Simple Drugs* and used it, it is interesting to notice that he seems to have ignored the existence of a translation of book 6, for he neither uses it in his description of simple remedies, nor epitomises it in the *Abbreviationes*. John of Saint-Amand is not the only evidence we have of a lack of interest of the academic milieu for the sketchy, and less informative – when compared to larger collections of simple remedies – book 6 of *On the Capacities of Simple Drugs*. The Bolognese *statuti* issued in 1405 did not recommend this section either. Therefore, we must consider the possibility that this section fared poorly not only in its manuscript transmission, but also in its academic reception.⁷⁵

The technique used by John to reduce and summarise the content of *On the Capacities of Simple Drugs* in the *Abbreviationes* deserves specific attention. First of all, it is possible to notice that John attempts to find his own path across the rather complex content and structure of the theoretical books of *On the Capacities of Simple Drugs* and to provide his readers with a simplified and 'easy to memorise' version of it by dividing the text into thirteen chapters,

72 John of Saint-Amand, *Areolae*, and *Concordantie*, ed. Pagel (1893; 1894).

73 John of Saint-Amand, *Areolae*, *Prologus*, ed. Pagel (1893: 1).

74 Cf. the list of sources in Schalick (1997: 309–20, esp. 314–15 on *On the Capacities of Simple Drugs*).

75 To the reception in the Bolognese milieu we can also associate what seems to be a small attempt to comment upon, or to reconstruct the structure of, *On the Capacities of Simple Drugs*, viz. Alberto de Zanchariis' *Recollecciones super libro Galieni de simplicibus farmaciis* preserved in the manuscript Cesena, Biblioteca Malatestiana, S.XXVII.4, fols 140vb–143rb (incipit: 'Secundum eandem causam etc. Oportet ut inquirantur') as a part of a group of similar Galenic writings of the same author.

and producing a separate summary of each chapter, without endeavouring to establish any internal links.

Second, while introducing each chapter, he recalls its 'incipits', possibly in order to allow his readers to find the beginning of a discussion of a new subject easily and to isolate the section in which this topic was discussed more clearly. This subdivision of the text into chapters may have been either the result of his own initiative, or the consequence of the strategies used by some Parisian masters to read the text and to convey its content. If John intended to facilitate reading, memorising, and interpreting *On the Capacities of Simple Drugs* in the Parisian academic milieu, he was either applying a system to access the text established by the same milieu, or was offering one to be used in the future.

Third, if we compare the content of the *Abbreviationes* with Galen's original, we may obtain some more information about the features of his summary. John's summary is characterised by its 'corollary' character. John does not follow the logical development of each topic, nor emphasise the moments of doubts, contradiction, and discussion; he merely copies the main subjects, without even linking them reciprocally, and lets them be accompanied sometimes by some practical examples derived from the Galenic text. Seen in this way, John's *Abbreviations* could be compared to a sort of mnemonic sketch aiming to help the readers selecting and memorising the main subjects of the text. This is not completely the case, though. In actual fact, I am tempted to argue that John's aim is not just to list the main topics of the text, but also – and, we may say, above all – to recall the ones that have become objects of debate. My argument may be supported by a characteristic of John's summary that has not been taken into account so far, that is the reference to other sources and authorities, for example to those contradicting Galen's position.⁷⁶ John's *Revocativum* is not just an aide-memoire to be read in order to memorise the main content of Galen's works, but also a mirror of the ongoing scholastic medical debate fostered by the comparison between the authority of Galen (in this case, of the principles conveyed by *On the Capacities of Simple Drugs*) and the Arabic-Latin medical tradition.

⁷⁶ Jacquart (1994b) suggests that the work is more than a simple collection of short sentences taken from the Galenic oeuvre, but quotes other sources, and reveals some 'embryons de commentaires' showing John's connection with contemporary scholastic medicine. My suggestion to explore the value of alternative sources (among which, we also find Avicenna's *Canon of Medicine*, who is quoted with respect to the *vexata questio* concerning nature and action of attractive medicines and substances [Jacquart 1998: 474]) and their connection with the scholastic medical debate intends to continue on this line of interpretation.

Up to this point, we have examined the long journey made by Gerard's incomplete translation throughout Medieval pharmacology, and, more generally, the impact of Galenic medicine, either in direct form, via the above-mentioned translation and its manuscript tradition, or indirectly, via Avicenna's *Canon of Medicine*, upon thirteenth-century academic medicine and medical curriculum. Now we examine the last phase of the diffusion and the reception of the Latin *On the Capacities of Simple Drugs*, this time with the help of the Greek-Latin translation completed by Niccolò da Reggio during the first decades of the fourteenth century.

4 Niccolò da Reggio's Translation, and the Late Medieval Transmission and Reception of *On the Capacities of Simple Drugs*

4.1 Before Niccolò: the Indirect Tradition of Galen through the *Aggregator de simplicibus medicinis* Attributed to the Pseudo-Serapion, and its Reception in Simon of Genoa's *Clavis sanationis* and Peter of Abano's Works

As I have demonstrated in the previous section, the diffusion of 'Galenic pharmacology' during the thirteenth century does not solely depend on Gerard of Cremona's incomplete Arabic-Latin translation of the original *On the Capacities of Simple Drugs*, but is conveyed by a library of direct and indirect sources. Within this corpus of texts, one may have the feeling that the original *On the Capacities of Simple Drugs* is almost overshadowed by the more compact vulgate provided, for instance, by Avicenna in his *Canon of Medicine*. The latter source indeed plays a relevant role, especially in transferring in a clear and detailed way the theoretical principles and the main debate topics that belong to Galenic pharmacology.

Avicenna is not, however, the only conveyor of Galenic pharmacology and of information ultimately derived from Galen and his work.⁷⁷ As we have

77 Here, I have to leave aside another possible indirect conveyor of Galenic pharmacology, the corpus of text attributed to the 'pseudo-Mesue' or 'Mesue junior'. This corpus consists of four writings, the *Canones universales* (an explanation of the properties of purgative medicines and of the rules of their use), the *De consolatione simplicium medicinarum* (a description of the properties of fifty-six purgative medicines), the *Antidotarium sive Grabadin* (a collection of compound medicines structured according to the type of *composita*), and the *Practica sive Grabadin* (a second collection of compound medicines, this time structured according to the diseases *a capite ad calcem*). It is possible that this corpus of texts might have acted as an encyclopaedia of Galenic pharmacology and pharmacy, but our insufficient knowledge of the origins of this corpus, its sources, and its

noticed, he was less receptive of Galen's indications about qualities and therapeutic properties of simple remedies. Nor was he interested in excerpting, collecting, and collating Galen's opinion on that matter with the other pharmacological authority of antiquity, Dioscorides. This task was undertaken by a specific tradition of Arabic pharmacological works which we may define as 'pharmacological encyclopaedias', and whose most illustrious representative was Ibn al-Bayṭār's *Kitāb al-Adwiyā al-mufrada*. If this work did not reach Western medical culture before the eighteenth century, another one bearing the same title was translated during the thirteenth century, the *Kitāb al-Adwiyā al-mufrada* written by Ibn Wāfid, which was rendered into Latin by Abraham of Tortosa and completed in Padua around 1280 or 1290. It was read in Latin as *Aggregator de simplicibus medicinis* and attributed to a pseudo-Serapion.⁷⁸ This work enjoyed a considerable success, and may have contributed to the transmission of Galenic excerpts and information derived from the Arabic tradition of his pharmacological works, and, above all, to assess in a clear fashion both nature and limits of the contribution the two authorities may deliver. What is important to emphasise, however, is that the *Aggregator* represents both a source of indirect transmission of Galenic pharmacology, and a text showing a way to connect and integrate the pharmacology of Dioscorides and Galen. Now, as the work was translated in Padua, it is important to spend a few words to examine, however briefly, its influence in the Paduan context.

The influence of pseudo-Serapion's *Aggregator* may have found an echo in one of the most important medical dictionaries of the Middle Ages, Simon of Genoa's *Clavis sanationis*, and more specifically in his integration of quotations derived from 'Galen'. In her article on 'Galenic Pharmacological Concepts', Petit delivers a good overview of the nature and function of the rare quotations derived from book 6 of *On the Capacities of Simple Drugs* that can be found in the *Clavis*.⁷⁹ She correctly states that Simon, while excerpting the sole version of the text he had at disposal – the Arabic-Latin anonymous translation – does not use it extensively, nor holds it in the same high esteem he reserves for Dioscorides. She also remarks that the text, which he probably accessed in a not yet identified manuscript of poor quality, does not help him in achieving his main goal, that is the offer of a good account on plant nomenclature. Although Simon does not openly affirm that, we may infer that, even if he had at his disposal a complete Arabic-Latin version including book 1–6, he would

transmission and reception does not allow us to determine its concrete action and function. Cf. *Opera Mesue* (1495).

78 Serapio iunior, *Liber aggregatus in simplicibus medicinis* (1479). See Dilg (1999).

79 Petit (2013b).

not find any support in his work in the first five books, where plant nomenclature is not discussed. Nor did he use Galen via the *Aggregator*, as in the rare cases in which the Arabic-Latin collection is used to quote an ancient source indirectly, this source is always Dioscorides, not Galen. In conclusion, Simon's lack of interest for Galen, which had already been noticed by Petit on the basis of the direct quotations of *On the Capacities of Simple Drugs*, can be confirmed by the negative results of the search for indirect quotations mediated by the pseudo-Serapion.

Our analysis of Galen's presence and use in the Paduan context cannot be concluded without spending a few words on the use of *On the Capacities of Simple Drugs* by Peter of Abano. In a previous article concerning Peter's *Expositio Problematum Aristotelis*, I had noticed that Galen is not often quoted in the botanical sections of the text (the *particulae* 20–22), which I considered strange – if we bear in mind Galen's meaning for the development of the university scholastic medicine represented by Peter's work – and he seemed to play a marginal role in the glosses added by Peter to the *Dioscorides alphabeticus* (that is, the alphabetical collection based on the *De materia medica* circulating during the Late Middle Ages under Dioscorides' name).⁸⁰ My assessment needs now to be reconsidered and corrected. In a recent article, Funk, while reviewing the authorities quoted in the glosses, has discovered that Galen is the third most quoted authority after Avicenna and the pseudo-Serapion.⁸¹ Such a discovery means that we may both have to reconsider the role played by Galen in general as an author and, in particular, by each of his medical and pharmacological writings. Generally speaking, we may argue that *On the Capacities of Simple Drugs* (and especially book 6) is mostly used by Peter, alone or together with other authorities such as Avicenna or the pseudo-Serapion, to confirm or to oppose the assessment of the nature of a substance provided by the *Dioscorides alphabeticus*.⁸² In this sense, Galen becomes part of a library of specialised sources employed to discuss and to review the content of the pseudo-Dioscoridean collection critically. On the other hand, no particular use of the theoretical part of *On the Capacities of Simple Drugs* (books 1–5) could be detected so far. The opposite can be said in the case of another important text

80 On Peter of Abano's use of pharmacological sources, see Ventura (2016).

81 Funk (2016).

82 This is the case, for instance, of the gloss accompanying the portion of the entry 'Acatia' (*Dioscorides alphabeticus* [1478] fols 3vb-4ra, here fol. 4ra), in which it is stated that the plant is dry in third degree, and cold in the second ('sicca est in tertio gradu, secundo frigida est', where Peter notices that this interpretation is opposed by the authority of Galen, Avicenna, and pseudo-Serapion ('Galenus sexto Simplicium, Avicenna et Aggregator magis est frigida in primo et sicca ad secundum, figidior tamen abluta reliqua').

written by Peter, the *Expositio Problematum*, where the rare mentions of *On the Capacities of Simple Drugs* are in line with the theoretical issues dealt with by Peter, and shows his acquaintance with the content of the first five books.

With the short allusion to Peter of Abano's use of *On the Capacities of Simple Drugs*, we have now reached the final chronological step of our journey, that is, the completion and the – limited – diffusion of the new Greek-Latin translation completed by Niccolò da Reggio during the first decades of the fourteenth century.

4.2 Niccolò's Translation: Stylistic Characteristics, Manuscript Tradition, and Reception

4.2.1 Niccolò da Reggio and the Translation of the *On the Capacities of Simple Drugs*

Niccolò's translating activity has become the object of growing interest during the last decades. Several scholars, among whom are Nutton, McVaugh, Fortuna, and Urso, have been devoting their attention to the analysis of his Galenic translation.⁸³ From their studies, Niccolò emerges as a very prolific translator, rendering into Latin more than sixty Galenic works, among which are several writings that had not been available in Latin before him. Without doubt, Niccolò's activity was part of a coherent cultural program supported, on one side, by the Angevin court (more specifically, by King Robert),⁸⁴ and at the same time the result of a well-planned choice of works that took into account the needs of contemporary physicians. As far as his translating style is concerned, several scholars have emphasised his deep respect for the Greek syntax, style, and technical terminology. This fidelity and respect, although appreciated by contemporary physicians, did not result in a wide diffusion and use of the texts he made available. Among the causes of their lack of success, we may identify the relatively marginal role played by some of the translated works, which were neither among Galen's most relevant literary output, and the lack of originality and style of the Latin versions that adhered too closely to the Greek original, and consequently were not easily accessible to Latin-speaking learned physicians.

The contribution of Niccolò's translation to the reconstruction and the knowledge of Galen's pharmacological *Schriftencorpus* can be hardly overestimated, for he did not only translate the entire *On the Capacities of Simple Drugs*

83 On Niccolò da Reggio, see Chandelier (2013). See also Nutton (2013a); Berlier (2013); Urso (2013); Boudon-Millot (2013), with further bibliography; Urso (2014); Fortuna (2014; 2015). See also Fortuna (Chapter 22) and Urso (Chapter 19) in this volume.

84 On medical culture at the Angevin court, see Ventura (2012); Robert (2015).

from Greek, filling the gap opened by the incomplete Arabic-Latin translation, but also rendered in Latin the *On the Composition of Drugs According to Places*. However, both translations were doomed to failure, since neither was widely transmitted and read.

4.2.2 Manuscript Tradition and Reception of Niccolò da Reggio's Translation of *On the Capacities of Simple Drugs*

The manuscript tradition of Niccolò's translation is rather thin, but nonetheless interesting. According to the presence in the manuscripts of both books 1–5 and 6–11 or only of the second group, it can be defined as a bipartite one, where the first branch hands down the complete text and the second the books 6/7–11 in connection with the sections 1–5 in Gerard of Cremona's version. This bipartite tradition, which has already been surveyed by Petit, requires some further considerations with reference to its chronological and geographical distribution, and its function in manuscript *corpora* of medical texts.⁸⁵

According to the *Galeno latino* database, the modest diffusion of Niccolò's translation consists of just ten manuscripts, of which only one, the codex Urbinas lat. 248 hands down the complete text. Most manuscripts only transmit the text of the books 6–11 in connection with Gerard's translation. A special case is represented by the manuscript Paris, BnF, lat. 9331, which shows the combination between Gerard's translation for books 1–5, the anonymous version of book 6, and Niccolò's Latin text for books 7–11, and has been connected with the 1490 Venetian print, which shows the same state of the text.⁸⁶

The chronology of the manuscript production shows that most copies were produced before 1350, the sole exception being represented by Urbinas lat. 248, and by three codices produced in the middle of the fifteenth century (Paris, Bibliothèque de l'Académie de Médecine, 52 and 53, and the lavishly decorated codex Dresden, SLUB, Db 93). The dating of the rare manuscripts we know of does not allow us to draw more than provisory conclusions, apart from the suspicion that the manuscript diffusion, which started soon after the translation was completed, soon lost momentum, and that after 1350, Niccolò's translation was not actively read and diffused. On the other side, the geographical distribution of the surviving manuscripts points to a manifest diffusion in the north of Italy, whereas only four codices (Paris, BnF, lat. 6865, Paris, Bibliothèque de l'Académie de Médecine, 52 and 53, and Dresden, SLUB, Db 93), represent the modest diffusion of the work on French territory. The French branch of

85 Petit (2013a).

86 Petit (2013a).

the manuscript tradition shows a basic distinction between the BnF witness, probably written in southern France, and therefore at least potentially, related to the reception of *On the Capacities of Simple Drugs* in the local university milieu, and the others, which are luxury codices produced in Paris or in the north of France, possibly for wealthy non-specialised readers. The combination of the evidence provided by the chronology and the geographical distribution of the surviving manuscripts seems to indicate that Niccolò's translation was essentially diffused, read, and used in Italy, and only sporadically touched French academic milieus. Even in Italy, it does not seem to have been able to substitute Gerard's Arabic-Latin translation or the medical authors who had conveyed the principles of Galenic pharmacology. The reason for this failure may not only lie in Niccolò's unsuccessful translation, but also in the fact that Galen's work was not considered interesting in a market monopolised by other texts and authors, such as Avicenna, Averroes' *Colliget*, the *Schriftencorpus* of the pseudo-Mesue or the *Aggregator de simplicibus medicinis* attributed to the pseudo-Serapion.

If the chronology and the geography of the (preserved) manuscripts help to shape the nature and the limits of the diffusion of Niccolò's translation and to guess the reason of such 'failure', it is more difficult to get more data from the manuscript context in which the work was included. The first difficulty can be found in the scarce number of manuscripts we can use for our survey: in actual fact, if we exclude the codices Urbinas lat. 248, we have some composite and heterogeneous witnesses, and with four large, but late, *corpora*, that is, the codex Paris, BnF, lat. 6865, and the three fifteenth-century luxury miscellanies, the manuscripts Dresden, SLUB, Db 92–93, and Paris, Bibliothèque de l'Académie de Médecine, 52 and 53, maybe the only ones we can really draw some useful information from.

What we can notice as a general trend, however, is that Niccolò's translation is preserved in volumes resulting from a carefully planned attempt to reunite in one volume a group of Arabic- and Greek-Latin translations of rare, marginal, secondary Galenic works that had just been translated, and had no clear relation, neither with the academic milieu, nor with the medical profession. This is the case of the manuscript Paris, BnF, lat. 6865, a 'precious volume of rare jewels', that does not tell very much about the reception and the concrete ways of reading and using Niccolò's version of *On the Capacities of Simple Drugs*, but may infer that this version was considered as a part of a movement to integrate the available Galenic corpus with new or previously only in incomplete or unsatisfactory form extant writings. At any rate, this miscellany does not represent, as correctly shown by McVaugh, the tool that conveyed Niccolò's translations to the court of Avignon and to the medical milieu of

Montpellier,⁸⁷ not even *On the Capacities of Simple Drugs*, which is available here only in its second section.

The situation is different for the three fifteenth-century luxury anthologies, such as the Dresden manuscript. The codex Dresden, SLUB, Db 93 is part of an original set of two codices (Db 92–93), being in turn part of an originally single volume, possibly produced in France at the end of the fifteenth century. The original set was studied and the rich illustrative corpus published as a facsimile before World War II, but as a result of the bombing of Dresden in 1945, the first part of the set, the codex Db 92, was severely damaged beyond any hope of restoration, and is no longer available for consultation. Thanks, however, to the research carried out by Nutton, among others, we know more about the content of the manuscripts and their illustrative corpus.⁸⁸ Furthermore, the digitisation of the Db 93 allows scholars to work at least on the second part of the volume.⁸⁹

The Dresden manuscript is interesting in many perspectives. First of all, because it represents one of the most interesting examples of illustrated medical manuscripts; and that, not only because of the large number of illustrations, but, as noted by Nutton, because of the close connection between the introducing illustrations placed within the initial letters of each Galenic treatise and the content of the same writing.⁹⁰ Second, because, together with the Parisian set preserved in the Académie de Médecine, it shows the preservation of complete Galenic *corpora* in large size, luxury manuscripts, probably most apt to be displayed than to be read. Finally, it shows, again in connection with the Parisian set, a slight departure from the above-mentioned intention to create and produce complete Galenic *corpora* featuring works that have no visible connection with the academic curriculum and milieu or the professional activity. On the contrary, Niccolò's translation of *On the Capacities of Simple Drugs* seems to become part of a new *Schriftencorpus* gathering together new translations that can be considered as 'outsider' compared to the major Galenic writings. Now, the Dresden manuscript and its corpus of texts constitutes an example of a further step in that direction, as it includes Niccolò's version of *On the Capacities of Simple Drugs* into a collection of rare, unknown, marginal, or 'non-academical' or 'non-professional' texts, which not only does not belong to the Galenic corpus, but also are of heterogeneous origin. In this

87 See McVaugh (2006).

88 Cf. Nutton (1977; 2011).

89 Digital version at <http://digital.slub-dresden.de/werkansicht/dlf/26862/1/> (accessed 30 November 2017).

90 Nutton (2011: 361).

sense, the Dresden manuscript seems to push forward some readers' desire to own the largest possible collection of medical texts, including even rarities, to the limits, and to make a choice of texts and a type of manuscript and *mise en page* that privileges the quantity, the rarity of the texts over their quality or usefulness, and the lavish, sophisticated construction of the codex over the effective transmission and availability of knowledge. In few words, we can say that, with the Dresden manuscript, the Galenic miscellanies including *On the Capacities of Simple Drugs* (and Niccolò's translation) have accomplished their journey from an academic-professional text to a product for high-level professional physicians and bibliophiles.

4.2.3 The Reception of Niccolò's Translation: the Example of Matthaeus Sylvaticus, *Liber pandectarum*

We cannot terminate our journey without looking at the indirect tradition of the work and the witness of its use. We know, for example, that Gentile da Foligno did not quote Galen very often in his *Commentum super Canonem Avicennae*,⁹¹ and that seems to imply that, for him, Galenic pharmacology was better conveyed and discussed by Avicenna than by Galen himself. It is not possible, unfortunately, to establish whether the sole commentator who expounded the first treatise of book 2 of Avicenna's *Canon of Medicine*, Dinus del Garbo, used *On the Capacities of Simple Drugs*, as his work has never been examined with respect to his use of Galen and his discussion of Galenic pharmacology.⁹² An examination of the role played by Galen in his commentary would help us to understand how far Galenic pharmacology, as summarised by Avicenna, was explained by reconnecting to 'original' Galenic thoughts.

Those two research strands must be left aside in this chapter, as they would require a long and specific discussion. Rather, I would concentrate on a single author selected among them, Matthaeus Sylvaticus, who provides with his *Liber pandectarum medicinarum* more material for a discussion about the reception

91 French (2001: 182) states that *On the Capacities of Simple Drugs* was quoted only twenty times by Gentile. French assumes that Gentile knew an old and a new translation, but the two examples he provides do not seem to add any clarity. In the first of them, the entry 'Spodium' (viz. Avicenna, *Liber canonis* [1507] II.ii.612, fol. 65va), Gentile only mentions a 'liber antiquus de medicina', which does not forcefully indicate Galen, whereas in the second one ('Melha', on which cf. *ibid.*, II.ii.486, fol. 54ra), recalls the Book 6, perhaps in the old Arabic-Latin version. French does not seem to have browsed the commentary on the first treatise, which may include further references to *On the Capacities of Simple Drugs*, in both versions.

92 Dinus del Garbo, *Canones generales* (1514).

of Niccolò's translation than a simple *terminus ante quem*.⁹³ As I have previously noted, Matthaeus surely had a complete version of Niccolò's translation of *On the Capacities of Simple Drugs* at his disposal;⁹⁴ this information should not surprise us if we consider that the *Liber pandectarum* was completed before 1332. However, he may have started incorporating Niccolò's translation well before, even in the first decades of the fourteenth century. Whatever the situation was, it is clear that Matthaeus might have known Niccolò's translation very early, and could use every book of it. In this sense, his text could perhaps be used as a form of indirect tradition to integrate the scarce manuscript basis one could use to prepare a critical edition of Niccolò's *On the Capacities of Simple Drugs*.

But how extensive are the quotations of Niccolò's *On the Capacities of Simple Drugs* in the *Liber pandectarum*? It is not possible to provide a definitive answer in this chapter, and for two main reasons. The first, and obvious, reason is that the collection is too large to allow a rapid search of all excerpts taken from *On the Capacities of Simple Drugs*; the second is that, behind the apparent clarity of the internal structure of the entries, the *Liber pandectarum* hides a sophisticated interplay of its sources. As demonstrated by Fischer, Matthaeus Sylvaticus attempts to supply his readers with as much information as he can; in order to do so, he does not refrain from quoting all the sources he had at his disposal (Dioscorides, Pliny the Elder, Avicenna, the pseudo-Serapion, Galen, the Salernitan collection *Circa instans*, Simon of Genoa's *Clavis sanationis*, as well as, perhaps, *Macer floridus* and Constantine the African's *Liber de gradibus*, and other sources), and from quoting them even if they repeat the same sort of data.⁹⁵ Moreover, he sometimes incorporates one source into the other, perhaps one 'minor' authority into a 'major' one. Finally, he often seems to have had the nomenclature provided by Simon of Genoa's *Clavis sanationis* as a point of departure (and to have used it together with the Latin one, preferring it to the Greek), and to have constructed the network of excerpts and sources around it. When confronted with this state of the text, it is difficult to cull from the large amount of references to 'Galen' what really comes from *On the Capacities of Simple Drugs*, and not, for example, from the pseudo-Serapion's *Aggregator* while flagging the authority of Galen. In order to do that, I have browsed a small, but hopefully representative sample – the first thirty chapters of the section belonging to the letter A in the Venice edition published in 1499

93 Matthaeus Sylvaticus, *Opus pandectarum* (1499). The manuscript tradition of Matthaeus' *Liber pandectarum* is examined in Bottiglieri (2007). Cf. also García González (2008).

94 Ventura (2012).

95 Fischer (2015).

(her fols 2ra-12vb) – and checked the entries derived from *On the Capacities of Simple Drugs* by separating them from the ‘indirect Galen’ received and used via the pseudo-Serapion. As far as I could see, Galen is quoted in almost all selected entries. Of all these excerpts, only four show that the reference to Galen is a second-hand one, as the real source is the *Aggregator* attributed to the pseudo-Serapion;⁹⁶ in two cases, the first-hand and the mediated source are both quoted under a generic reference to ‘Galen’. All the others are taken from Niccolò’s *On the Capacities of Simple Drugs* (Matthaeus does not seem to have known or valued Gerard’s or the anonymous translation of book 6) and find a parallel in Kühn’s edition.⁹⁷ Galen is quoted literally, as Matthaeus carefully tries to avoid paraphrases. Furthermore, our compiler usually reproduces the whole entry devoted to a medical remedy. This does not surprise us, for the descriptions of the therapeutic properties are usually short in *On the Capacities of Simple Drugs*, and do not require to be cut.

Matthaeus probably held Galen’s pharmacology in high esteem, for he took great advantage of the content of *On the Capacities of Simple Drugs* by excerpting most of its entries and reproduced their whole content. As far as I can see, he seems to acknowledge that *On the Capacities of Simple Drugs* had something to offer that other works could not, that is more therapeutic indications, which he uses to integrate the section ‘Posse’ (= therapeutic powers), and, above all, the accounts on their nature and complexions, and on the external signs derived from them (such as tastes). Therefore, we may argue that, although the excerpts derived from *On the Capacities of Simple Drugs* are smaller compared to the ones taken from Dioscorides, the pseudo-Serapion, and the *Circa instans* (which is sometimes used at the beginning of the section ‘Posse’ without being openly acknowledged as a source), Matthaeus Sylvaticus seems to have understood the value of *On the Capacities of Simple Drugs* not just as a source of further therapeutic indications and as a tool to achieve the ‘completeness of information’, but also as a work including important data concerning the nature and the complexion of natural objects that had just gained meaning in university pharmacology.

96 An example of these second-hand quotations is represented by the entry ‘Abaisir sive spodium’, whose source can be found in Serapio iunior, *Liber aggregatus* (1479) fol. 98r, s.v. ‘Spodium’ (partim).

97 E.g., see the entries ‘Aaron’ (= *SMT*, 6.61, ed. Kühn [1826] x1.839), ‘Abel’ (= *SMT* 6.i.15, ed. Kühn [1826] x1.853), ‘Abrotanum’ (= *SMT* 6.i.1, ed. Kühn [1826] x1.798 sqq., possibly integrated with another source), ‘Absinthium’ (= *SMT*, 6.i.1, ed. Kühn [1826] x1.798ff., and 8.xviii.8, ed. Kühn [1826] x11.119), ‘Acanug sive aristologia’ (= *SMT* 6.i.56, ed. Kühn [1826] x1.835–6), and ‘Acar sive fungus’ (= *SMT* 7.xii.25, ed. Kühn [1826] x11.79–80).

5 Conclusions

Our journey throughout the Latin tradition of *On the Capacities of Simple Drugs* and Galenic pharmacology in Western Europe has shown the necessity of tracing the history of this work by taking into account the various translations with their internal characteristics and their manuscript traditions, as well as the use made of *On the Capacities of Simple Drugs* by leading medical authors. Besides, the history of the Latin reception of *On the Capacities of Simple Drugs* and of Galenic pharmacology cannot be written without taking into account the indirect transmission of the text and the transfer of its content and of its intellectual background assured by authoritative personalities and texts such as al-Majūsī and his *Pantegni* and Avicenna and his *Canon of Medicine* (just to mention some of them). And that, not to speak of the transmission of what was supposed to be ‘Galenic pharmacology’ during Late Antiquity and the first centuries of the Middle Ages, a time when the texts attributed to Galen were either pale shadows of his original production, or small compilations simply put under his illustrious name.

The ‘original Galen’ was overshadowed and eclipsed by the ‘mediators’ offering a *vulgata versio* of his theoretical background, but also the intellectual engagement with ‘Galenic pharmacology’ went far beyond the simple reading of *On the Capacities of Simple Drugs*, and involved the reception and the use of several pharmacological sources depending on, or permeated by, Galenic thinking.

Now, I can only conclude by recalling that we need a critical edition assembling, as in the case of the *On Problematical Movements*,⁹⁸ a parallel transcription of both Latin translations. We also need a deeper evaluation of the role played by authors I have mentioned in this chapter, such as Avicenna, or authors that I had to leave aside, such as Averroes with his *Colliget*. And, last but not least, we need to explore in depth the connections linking *On the Capacities of Simple Drugs* with the development of scholastic medicine and pharmacology.

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⁹⁸ Galen, *Mot. Dub.*, ed. Bos and Nutton (2011).

are, of course, my own. All Latin manuscripts of *SMT* mentioned in this article are described in the *Galeno latino*, at www.galenolatino.com (accessed 30 November 2017).

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PART 4

Galen in the Renaissance and Beyond



Editions and Translations of Galen from 1490 to 1540

Stefania Fortuna

In the early sixteenth century, Galen's works were still chiefly known through medieval translations from Arabic into Latin, which continued to be predominant in medical teaching throughout Europe.¹ This predominance is also demonstrated by an imaginative story reported in the preface to the second Latin edition of Galen, which was printed by Bernardino Benali in Venice in 1502.² The editor Girolamo Suriano (d. 1522), a physician from Rimini who had already published various medical and philosophical texts, narrates that one night he was visited by Galen himself, who demanded a new edition of his writings, because numerous mistakes by previous editors had made his works almost incomprehensible. Galen then showed to Suriano his own huge manuscript, presented as the 'archetype', where he had reported in the margins all the mistakes found in current copies. Interestingly, whereas Galen is described as an old man with Greek features and garb, the volume was in Latin. When Galen opened it, Suriano saw *On Problematical Movements*, the treatise on anatomy and physiology that had been translated from Arabic by Mark of Toledo around 1200.³

The first Latin edition of Galen was published by Diomedes Bonardo, an obscure physician from Brescia, and printed by Filippo Pinzi in Venice in 1490.⁴ In a characteristically humanist attempt to make Galen's medicine available *ex*

1 All translations are my own.

2 On this and other Latin editions of Galen's works, from 1490 to 1625, see Fortuna (2012); also Fortuna (2005) on the editions from 1490 to 1533. Galen's editions printed in the fifteenth and sixteenth centuries are listed by Durling (1961) in a remarkable article, which is still a reference work; for a few additions see Fortuna and Raia (2006). On the editions, tradition, and reception of Galen in the Renaissance, see the outstanding contribution of Nutton (1987), which inspired much further research; also the synthesis in Nutton (2008).

3 On this translation, transmitted in two slightly different recensions, see the edition by Nutton in Bos and Nutton (2011).

4 This edition is described in the online catalogue of *Galenolatio*, at www.galenolatio.com (accessed 4 June 2017). It has been planned that the other Latin editions of Galen will be described in the same catalogue. It currently provides the description of about 150 Galen's translations or pseudo-Galenic texts, 500 manuscripts, and only a few printed editions.

fonte, Bonardo tried to collect as many as possible of Galen's Latin manuscripts from libraries all over Italy. His two-volume edition contains seventy-nine writings, of which twenty-four (about 30 per cent) are pseudo-Galenic tracts dating from Late Antiquity to the Middle Ages.⁵ Besides several widely circulating medieval translations from Arabic by Mark of Toledo and, especially, Gerard of Cremona (1114–87), the edition includes more than forty translations from Greek by Niccolò da Reggio (*fl.* 1308–45), which had never achieved wide circulation because they were too literal, hence incomprehensible to readers who did not know Greek.⁶ Some of them, like *On the Best Method of Teaching* and *On the Parts of the Art of Medicine*, are preserved only in printed editions.⁷

Some years later, Suriano improved Bonardo's first edition using Latin manuscripts similar to Galen's 'archetype'. In his second edition (1502), he corrected the texts published by Bonardo and reported different readings in the margins. He also added further translations of Galen and pseudo-Galen and some Latin texts, eleven overall. Among them was the translation by Niccolò da Reggio of Galen's monumental anatomical and physiological tract *On the Function of the Parts of the Body*, which was reviewed in subsequent editions, but never replaced.⁸ Suriano also tried to organise Galen's works by content, and included the tracts on biology, anatomy, physiology, and dietetics in the first volume, and those on diagnosis, pathology, therapy, and the eleven new texts in the second (with some adjustments required by their size). The two volumes were reprinted almost without changes until the Giuntine of 1528.

Like Bonardo's first edition, Suriano's second edition contained medieval and even earlier translations of Galen and pseudo-Galen; moreover, among the new texts it also included the humanist translation of the *Art of Medicine* by Lorenzo Lorenzi (c. 1460–1502), a Florentine physician and professor of philosophy and medicine in Pisa and in Florence.⁹ In the title, other translations by Lorenzi are announced after the main translation, as follows (c. aaar): *Subsequuntur complura alia Hippocratis et Galeni opera per eundem interpretata*. In fact, however, even though Lorenzi had also translated other works by Galen (*On the Different Kinds of Fevers* and *On Crises*) and two by Hippocrates (the *Aphorisms* and the *Prognostic*, both with Galen's commentaries), Suriano only published his translation of the *Art of Medicine*. This was Galen's most famous work, because it was written as a summary and an introduction to

5 On pseudo-Galenic texts in Galen's editions, see Fortuna (forthcoming).

6 See Urso (Chapter 19) in this volume.

7 On the translation of *On the Parts of the Art of Medicine*, see the edition by Schöne (1911); on the translation of *On the Best Method of Teaching*, see Barigazzi (1991: 39–47).

8 On this translation, see Berlier (2013).

9 On Lorenzo Lorenzi, see Palumbo (2006) and the bibliography mentioned in Savino (2013).

medicine for students, and was indeed used in medical teaching from Late Antiquity to the Renaissance.¹⁰

Lorenzi completed his translation of the *Art of Medicine* in the early months of 1500. This is indicated by the fact that the dedicatory letter to Francesco Pandolfini (1466–1520) – a Florentine politician and humanist, whose translation of pseudo-Galen's *Medical Definitions* mentioned by Lorenzi is not preserved – is dated 13 February 1500. Nicolò Leonicensino (1428–1524), a professor of mathematics, philosophy, and medicine in Ferrara, also translated the *Art of Medicine* at the same time or slightly later; although his translation was completed in 1503, it was not printed until 1508, by Giacomo Penzio in Venice.¹¹ This work went on to become the most often reprinted translation of Galen, despite the fact that in the sixteenth century the tract was retranslated several times by other erudite physicians, including Giovanni Mainardi (1462–1536), a pupil of Leonicensino who succeeded him in his chair in Ferrara.¹²

Leonicensino made important contributions to the *Art of Medicine* not only as a translator, but also as a textual emendator and commentator. He provided a new, compelling interpretation of the initial part of the *Art of Medicine* containing the distinction of the three methods, in *De tribus doctinis ordinatis secundum Galeni sententiam*. His interpretation influenced subsequent generations of commentators, including the Swiss physician and humanist scholar Theodor Zwinger (1533–88), who earned his doctorate in Padua and wrote *Theatrum vitae humanae*.¹³ Leonicensino also proposed two corrections to the Greek text of the *Art of Medicine* in the introduction to his translations, *In libros Galeni e greca in latinam linguam a se translato prefatio communis*.¹⁴ Both writings were published in 1508, together with his translation of the *Art of Medicine*.

Leonicensino translated many other works by Galen, eleven in all.¹⁵ His first translation may have been Galen's commentary on the *Aphorisms*, which was finished in 1490, as we know from a letter by Angelo Poliziano (1454–94). This work was eventually printed by Giovanni Mazzocchi in Ferrara in 1509, and

10 On the *Art of Medicine*, see Boudon (2000).

11 On Niccolò Leonicensino, see the relevant introduction of Mugnai Carrara (1991); also Pellegrini (2013). On his translation of the *Art of Medicine* and its Greek sources, see Fortuna (1999a).

12 On Giovanni Mainardi and his influence in European medicine, see Mugnai Carrara (2006).

13 On Leonicensino's *De tribus doctinis ordinatis secundum Galeni sententiam*, see Mugnai Carrara (1983); on Zwinger as commentator of Galen, see Fortuna (1993a: 313–15).

14 On Leonicensino's *Prefatio communis*, see Fortuna (2007: 332–5); Mugnai Carrara (2012).

15 On Leonicensino's translations of Galen, see the *Appendix* in Fortuna (2006: 459–62).

subsequently reprinted several times during the sixteenth century and even later.¹⁶ In the same years, Poliziano was also translating Galen's commentary on the *Aphorisms*, a writing that had enjoyed wide circulation through the medieval translation from Arabic by Constantine the African (d. before 1098/99).¹⁷ Poliziano's translation is not extant, but Lorenzi was suspected of plagiarism, after he had published a translation of the *Aphorisms* and of Galen's commentary by Antonio Miscomini in Florence on 16 October 1494, a few days after Poliziano's death on 29 September 1494.¹⁸ Even though Lorenzi undoubtedly plagiarised Poliziano's collation of Apicius, which is preserved in the manuscript Vaticanus lat. 6337,¹⁹ he is probably the translator of the commentary on the *Aphorisms*, because the text is stylistically very similar to some of his works, especially his translation of Galen's commentary on the *Prognostic*, which should therefore date from the same period.²⁰

Leoniceno and Lorenzi hold different places in the history of medical humanism; their translations were also received in different ways. According to Andrea Torresano (1451–1529), Leoniceno was a great translator and scientist, whereas Lorenzi, who worked equally hard, did not achieve the same results and success for a number of reasons, including fate – a reference to the fact that Lorenzi committed suicide when he was about forty.²¹ Leoniceno's and Lorenzi's translations were printed several years after their completion. With the exception of the commentary on the *Aphorisms*, which Lorenzi published

16 On this translation, see Fortuna (1999b: 491–8).

17 On Constantine the African's translations of Galen, see Green (Chapter 17) and Long (Chapter 18) in this volume.

18 See Perosa (1980).

19 See Campana (1957).

20 See Savino (2013).

21 Andrea Torresano, preface to Galen's first Greek edition, Venice 1525–6, vol. v, published by Botfield (1861: 362): *Primus ... Leonicens auspicato et Galenum latine loqui docuit et multa praeter medicorum nostri temporis sententiam primus adinvenit, unde merito maxima illi laus et gloria sit quaesita, quae senescere nunquam debeat; eandem industriam aemulatus Laurentianus, etsi non parem laudem adeptus, quippe cui et brevior aetas et infestiora fuere numina, in eo tamen maxime commendatus, quod et quae erant optima vidit, nec ab hoc illum studio aut temporis inscitia aut medicorum in illum flagrantissima odia abducere unquam potuere* ('Leoniceno auspiciously taught Galen to speak Latin and was the first to make many discoveries, by contrast with the opinion of contemporary physicians. Therefore, he rightly obtained praise and glory, which should never grow old. Lorenzi made the same effort, but he did not obtain the same praise, because his life was shorter and the deities were more hostile. Nevertheless, he should be much appreciated, because he recognised what the best was, and the ignorance of the time and the strong opposition of colleagues were never able to prevent him from pursuing his aim').

himself, all his translations were published posthumously, from 1502 to 1522. Leoniceno's translations were not published before 1508, even though some of them – at least the *Art of Medicine* and the commentary on the *Aphorisms* – had already been completed, whereas his translation of *On Elements* was published posthumously in 1541. In the early sixteenth century, the market was dominated by medieval translations from Arabic, which were provided with comments and were used in academic medical teaching, whereas the new translations of Galen's works achieved limited circulation.

The third Latin edition of Galen is not extant, but was probably very similar to the second and was also printed by Bernardino Benali in 1513–14, whereas the fourth edition was printed by Giacomo Pocatela in Pavia in 1515–16. The editor, Pietro Antonio Rustico from Piacenza, reorganised the first two volumes, according to the Arabic distinction of medicine into theory and practice, and added a third volume that contained medieval and humanist translations that had never been printed in Galen's earlier editions. The third volume contains the commentaries on Hippocrates' *Aphorisms*, *Prognostic*, and *Regimen in Acute Diseases* – which were included in the *Articella*, the basic medical handbook adopted by all European universities until the sixteenth century – in the medieval translations by Constantine the African and Gerard of Cremona, as well as in the humanist translations by Lorenzi and Leoniceno. It also contains a group of seven translations of Galen's and pseudo-Galen's texts by the humanist Giorgio Valla of Piacenza (1447–1500), most of which had already been published in 1498, and one by his son Giovanni Pietro. From then on, the number of Galen's works in the editions increased considerably, the majority being humanist translations.

From the 1510s to the early 1520s, two more humanist physicians translated Galenic works that already boasted medieval translations and sometimes even humanist translations. The Basle physician Wilhelm Kopp (1463–1532), who studied medicine in Paris and lived there as professor of medicine and royal physician to Louis XII and Francis I, translated Galen's treatises on diagnosis and pathology, *On Affected Parts* in 1513 and *Differences and Causes of Diseases and Symptoms* in 1523.²² The English physician Thomas Linacre (c. 1460–1524), who lived in Italy from 1487 to 1499, where he studied Greek in Florence and medicine in Padua and collaborated with the great humanist printer Aldus Manutius (1449–1515) in Venice, published eight translations of Galen from 1517 to 1524, including his main treatises on treatment and dietetics, *Therapeutic Method* and *On the Preservation of Health*.²³ Kopp's and, especially, Linacre's

22 On Wilhelm Kopp and his Galen's translations, see Fortuna (2008).

23 On Thomas Linacre, see Nutton (2004); on his translations of Galen, see Durling (1977).

translations were much appreciated and were reprinted well into the seventeenth century. Erasmus of Rotterdam (1466/69–1536) considered Leonicens, Linacre, and Kopp as the best translators and champions of medicine in the world.²⁴ Although Leonicens was the unquestioned leader, Linacre's translations were deemed superior to all others. Erasmus said that Leonicens was chiefly a physician, not an orator.

In *De Plinii erroribus* – a manifesto of medical humanism that was first published in 1492 and reprinted in an expanded edition in 1509 – Leonicens criticised Latin and Arabic authors like Pliny and Avicenna, because they misunderstood and corrupted ancient Greek texts, whereas he translated and commented on Galen's works 'day and night' to bring 'some light of truth' to mankind.²⁵ In the prefaces to their translations, the first humanist physicians praised their own translations and criticised the medieval translations from Arabic and Greek as inaccurate, incomprehensible, and barbarous.²⁶ Indeed, they tried to render the ancient Greek medical texts – already known in the Middle Ages – in a new, elegant Latin similar to the language of the classical authors such as Pliny, Celsus, Cicero, and Seneca, as Theodore Gaza (1415–75) had done for Aristotle's *History of Animals*, and Theophrastus' *Enquiry into Plants*. But despite vociferous claims, the new translations went only a short way to changing medicine. For that, an easily accessible Galen in Greek was needed.

Greek manuscripts were rare and expensive even in the early sixteenth century, when several Greek copyists worked in the main Italian cities, and medical manuscripts even rarer. Leonicens was unusual in acquiring a large number of Greek manuscripts of medicine and philosophy, which were authoritatively cited by himself and often requested, not always successfully, by his contemporaries. Immediately after Leonicens's death on 19 June 1524, his heirs decided to sell his fabulous library and drew up an inventory that included more

24 Erasmus, *Ep.* 541, ed. Allen (1910) 11.489: *Medicinam vero quam multi vindicant! Romae Nicolaus Leonicens, apud Gallos Gulielmus Copus ac Joannes Ruellus et apud Britannos Thomas Linacrus* ('How many physicians defend medicine! Niccolò Leonicens in Rome, Wilhelm Kopp and Jean Ruelle in France, and Thomas Linacre in Britain').

25 Leonicens (1509: 74r): *Nos sane ad hanc amovendam atque extirpandam et nostrae aetatis hominibus lucem aliquam veritatis aperiendam, partim librorum Galeni medicorum principis translationibus, partim in eosdem commentationibus, die noctuque laboramus* ('Actually we work day and night to bring some light of truth to mankind, both by translating the works of Galen, the prince of physicians, and by commenting on them'). On Leonicens and the humanist polemic against Arabic medicine, see Pormann (2004).

26 On the prefaces to humanist translations of Greek medical texts, see Fortuna (2007).

than twenty Greek manuscripts of Galen.²⁷ Cardinal Niccolò Ridolfi (1501–55), a renowned book collector, bought the majority of Leonicensio's Greek manuscripts, which are now preserved in Paris at the Bibliothèque Nationale de France (Ridolfi collection). Therefore, nearly all the originals that Leonicensio employed for his translations have fortunately been identified, as has the Greek manuscript that Kopp used to translate Galen's *On Affected Parts*.²⁸ The first humanist translators tended to use recent Greek manuscripts, even when older ones were available – as did Leonicensio, whose library contained several manuscripts of the *Art of Medicine*²⁹ – and did not disdain to correct the Greek text based on the very medieval translations they despised.

The first Greek edition of Galen's works, published in Venice in 1525–6, is a landmark in the history of editing and translating Galen. Before then, only two of Galen's tracts – *Therapeutic Method* and the *Therapeutics to Glaucon*, his major works on treatment – had been printed in the original, by the Cretans Zacharias Kalliergis and Nicholas Vlastos, in Venice in 1500. This folio edition is beautiful and philologically accurate, since various Greek manuscripts were used to establish the text; they included a manuscript copied by Kalliergis, and others sold by Leonicensio to the Cretan scholar Marcus Musurus (c. 1470–1517), who was collaborating with Kalliergis when he went to Ferrara in 1499.³⁰ However, the edition was too expensive: the press suffered a financial crisis and stopped production.

In the same years, the great printer Aldus Manutius was planning to publish the works of all the Greek physicians, as he wrote in his prefaces to the editions of Aristotle (1496) and Aristophanes (1498). In 1499, he printed the Greek edition of Dioscorides, after strong interest in the author had been attracted by the publication of *De Plinii erroribus* by Leonicensio, a friend and collaborator who also gave him some Greek manuscripts, at least for the editions of Aristotle and Theophrastus.³¹ However, Aldus was unable to print any further Greek physicians in his life; Galen and Hippocrates were published in the original by his heirs in 1525 and 1526, ten years after his death.³²

27 The inventory of Leonicensio's library is preserved in the manuscript of Vicenza, Biblioteca Civica Bertoliana, *Gonz.* 24. 10. 46; see the edition by Mugnai Carrara (1991).

28 On the Greek originals of Leonicensio's translations, see Fortuna (2006); on the Greek manuscript used by Kopp in his translation of Galen's *On Affected Parts*, see Fortuna (1993b).

29 On the Greek manuscripts of the *Art of Medicine* in Leonicensio's library, see Fortuna (1999a).

30 On this edition and its sources, see Lorusso (forthcoming).

31 See Sicherl (1997: 31–113).

32 On the date of Galen's Aldine, see Potter (1998): vols. I–IV were printed in 1525; vol. V, undated, was printed in April 1526, after Hippocrates' Aldine.

Galen's Greek Aldine was an extraordinary undertaking in five folio volumes. It provided an amazingly large number of texts, more than a hundred, that had never been printed together, about half of which had never even been translated into Latin.³³ Hitherto unknown theories and ideas of Galen on anatomy, physiology, and philosophy, as well as new pharmacological and surgical therapies including orthopaedic practices and venesection, became available through these texts. This edition has been defined as 'a risky enterprise',³⁴ because the huge investment and resources it required were not rapidly covered by sales; a few copies were printed, their price too steep except for the small number of wealthy physicians who could read Greek at the time. Accordingly, contrary to the usual practice, there were no reprints.

Aldus' heirs, Andrea Torresano and his sons, collected a large number of manuscripts from libraries in Venice and Padua for their edition; others were commissioned from Zanetti's Venice workshop, which employed the Greek copyists Nicholas Pachys and Constantine Mesobotes; still others, more than has been supposed in the past, came from Leonicensio's library. The editor in chief was Giovanni Battista Opizzoni (c. 1490–c. 1532), an erudite physician who taught medicine at the university of Pavia and had close relationships with Ferrara and Venice. He was supported by five scholars and physicians from Northern Europe: Edward Wotton (1492–1555), John Clement (c. 1500–1572), William Rose (c. 1490–1525), and Thomas Lupset (c. 1495–1530) came from England, and had links with Linacre, whereas Georg Agricola (1494–1555), who went on to achieve great renown for his work on mineralogy, came from Germany.

Galen's texts were established based on different Greek manuscripts, whenever they were available, and corrected on the basis of medieval translations, especially those from Greek by Niccolò da Reggio, as shown by several printer's copies that have been preserved. Galen's works were divided by subject into five volumes, in an order that was similar to the one followed by Suriano in his two-volume Latin edition: biology, anatomy, and physiology (vol. I); pharmacology (vol. II); diagnosis and pathology (vol. III); surgery, therapy, and dietetics (vol. IV); volume V was devoted to Galen's commentaries on Hippocrates, with the *Glossary of Hippocratic Terms*. A special section containing spurious works was added in the end of volume IV: for the first time, works that had been handed down through manuscripts under Galen's name were not only collected, but also assessed philologically and identified with remarkable accuracy.

33 On Galen's Aldine, see Mani (1956); Nutton (1987: 38–43); Perilli (2012). On its sources, see Fortuna (2006); Guardasole (2008); Pietrobelli (2013).

34 See Perilli (2012).

Despite the commitment of all involved, the Greek text of Galen's Aldine was far from perfect. It was harshly criticised by Erasmus, who received a gift copy from Andrea Torresano, and soon after, in May 1526, published his own translations of three of Galen's introductory and philosophical tracts: *Exhortation to the Study of the Arts*, *The Best Doctor is also a Philosopher*, and *On the Best Method of Teaching*. However, the next Greek edition of Galen, printed by Andreas Cratander in Basle in 1538, was not much better than the Aldine, despite the participation of distinguished scholars such as Leonhard Fuchs (1501–66) and Hieronymus *Gemusaeus* (Gmües, 1505–44) as editors.³⁵ It is worth mentioning that, even today, many of Galen's works are still available in a Greek text similar to that of the Aldine.

From 1525 onwards, Galen's translations were prepared on the Aldine, and Greek manuscripts were rarely consulted. In the 1520s, the number of printed Latin editions gradually increased, especially those including one or more humanist translations by Linacre, Leonicensio, Kopp, and Lorenzi. In fact, humanist translations, at first used in addition to medieval translations, progressively replaced them in Europe's medical schools, which thus became important new outlets for these works. From the late 1520s through the 1530s, a large number of new translations of Galenic works – both those already available in medieval translations and others that had never been translated into Latin – were provided by numerous, variously productive, both known and obscure translators from all over Europe. In Paris from 1528 to 1536, Guinther of Andernach (1505–74), who became famous at least as a professor of Andreas Vesalius (1514–64), published more than forty translations of Galen, most of which were printed by Simon de Colines for medical students.³⁶ In 1526, Simon de Colines had already printed the translations of Galen's two anatomical treatises on veins and arteries by André Fortoul of Jausiers, who was otherwise unknown.³⁷ Ten years later, in 1536, the distinguished philologist and physician Janus Cornarius (c. 1500–58) published his first collection of Galen's translations by Hieronymus Froben and Nikolaus Episcopus in Basle.³⁸ Giovan Bernardo Regazzola, better known as Feliciano (c. 1490–c.1552), Theodoricus Gerardus from Gouda (c. 1490–c. 1530), Joseph Struthius from Poznan (1510–69), and Hermann Croeser from Kempen (1510–73), among others, also published their translations of Galen in the same years.³⁹ Thanks to Galen's work, all fields of

35 On this edition, see Gundert (2006).

36 On Guinther as translator of Galen, see Fortuna (1993a: 303–5); Pennuto (2013: 1113–42).

37 André Fortoul translated Galen on the Aldine; see Fortuna (2012: 397).

38 On Cornarius and Galen, see Guardasole (2010).

39 On Theodoricus Gerardus, see Calà (2013); Petit (2013: 1079–82); on Giovan Bernardo Regazzola, see Fortuna (2016).

medicine, from anatomy to therapy, including surgery and venesection, were making advances.

In 1522, the Florentine printer Lucantonio Giunta (1457–1538), who several years earlier had set up a press in Venice, published the fifth Latin edition of Galen, starting an extraordinarily successful series of eleven reprints and editions that ran until 1625. Lucantonio (and his son Tommaso) invested cautiously in the project, and printed only a small number of copies without making any changes to the texts. Indeed, the first two volumes of their edition were reprints of Suriano's second edition of 1502, and the third volume was a reprint of Rustico's fourth edition of 1515–16. Even though the title pages and colophons were different, the publishers changed nothing else, not even the prefaces and the dedicatory letters.

The third volume, containing the humanist translations, rapidly sold out. Tommaso Giunta (1494–1566) appointed the erudite physician and philosopher Giuliano Marziano Rota from Venice to prepare another edition of Galen, which was published in 1528 as '*novissima*' (not as the sixth, as would have been natural). The first three volumes reprinted the 1522 Giuntine, with minor changes, whereas the fourth volume, albeit new, contained previously published humanist translations by Leonicensio, Linacre, and Kopp. The unsigned preface to the first volume was probably written by Rota like the others (which he signed); it presents the new four-volume edition, stressing that it provides all available translations of Galen's works for a reasonable price. In fact, the publications of this press were very competitive.

A few months later, in autumn 1528, another Latin edition of Galen, designated as the sixth edition (now very rare), was printed by the Gabiano press in Lyon. The editor Joannes Nebriensis Rivirius was an obscure pupil of Symphorien Champier (1471–1538), a leading member of medical humanism in France. However, Rustico was also involved; indeed, the first two volumes, containing medieval translations, are very similar to Rustico's fourth edition, whereas the third volume is devoted to previously published humanist translations, including those of three treatises on arteries, veins, and muscles by Fortoul and Leonicensio. The latter translations were not found in the 1528 Giuntine, which contrary to Rota's claim in the preface was therefore incomplete.

Giunta's response, in 1531, was to print a supplementary volume, which collected thirty-six previously published translations:⁴⁰ the three above-mentioned translations by Fortoul and Leonicensio; the translation of Galen's major anatomy tract, *On Anatomical Procedures*, by Demetrios Chalkokondyles

40 On the supplementary volumes of 1531 and 1533, which are very rare, see Fortuna (1994).

(1423–1511);⁴¹ the three translations by Erasmus, which had never been printed in complete editions; and sixteen translations by Guinther of Andernach, including the very first translation of the pharmacological tract *On the Composition of Drugs According to Places*. Very soon the fifth volume was also updated. In 1533, Giunta printed another supplement to the 1528 edition, the sixth volume, containing nineteen translations. Several of them had already been published, like the translation of *On Anatomical Procedures* by Guinther, which was intended to replace Chalkokondyles' translation. However, a remarkable set of four translations by Giovan Bernardo Feliciano, in the beginning of the volume, had never been printed before; of these, the translation of Galen's treatise on the soul, *On the Doctrines of Hippocrates and Plato*, had been unknown in the Western world until the Aldine.⁴² The Giunta press therefore not only collected existing translations, but also commissioned new ones.

In the early 1530s, the humanist translations of Galenic treatises already made up an impressive collection. They attracted such keen scientific and academic interest that they gradually superseded the medieval translations. The edition of 1528, the first two volumes of which contained medieval translations, had clearly ceased to be a model. Lucantonio Giunta had been planning a new edition that would provide all known Galenic works in humanist translations, when he died in 1538. The project, which required considerable investment, was completed by his heirs a few years later, in 1541–42. This time the editor was Agostino Gadaldini (1515–75), a young physician and philologist, whose father, Antonio, was a printer in Modena.⁴³ In the preface, Gadaldini wrote that Giunta had commissioned several translations or revisions of existing ones.⁴⁴ For instance, Andreas Vesalius reviewed the translations of Galen's anatomical tracts, especially *On Anatomical Procedures*, although he was afraid of offending his professor Guinther of Andernach. Gadaldini also mentioned the numerous sources that were used to correct the texts. The task of collating Greek manuscripts and supervising the project was so demanding that he fell sick and was forced to rest for some months.

The order in which Galen's works were printed was laid down by Giovanni Battista Da Monte (1489–1551).⁴⁵ A pupil of Leoniceno in Ferrara, in 1539 he became a professor of medicine in Padua, where he improved medical teaching, and in 1545 founded the botanical garden. In a letter to Lucantonio Giunta,

41 On this translation, see Fortuna (1999c).

42 On this treatise in the Renaissance, see Nutton (1988).

43 On Agostino Gadaldini as editor and translator of Galen, see Garofalo (2004).

44 An English translation of Gadaldini's preface is contained in O'Malley (1964: 102–4).

45 On Giovanni Battista Da Monte and the order of Galen's works, see Mugnai Carrara (1999).

Da Monte explained that he had decided to adopt the organisation that Galen had followed in *On the Composition of the Art of Medicine*, where all the medical disciplines are briefly described. He thus established seven sections or 'classes': biology, anatomy, and physiology (cl. 1), dietetics (cl. 2), pathology (cl. 3), semeiotics (cl. 4), pharmacology (cl. 5), surgery (cl. 6), and therapy (cl. 7). He also added three sections: introductory works, works *extra ordinem*, and spurious works.

Moreover, in his letter Da Monte explained that the spurious works that provided contributions to their discipline had been included in the same section as the genuine tracts, and that the section of spurious works contained only 'useless' and 'superfluous' works. *On Problematical Movements*, which was considered neither genuine nor 'useful', was included among the spurious works. According to the anecdote reported in the preface to the 1502 edition, this is the very tract that Galen showed to Suriano when he tried to convince him to publish a new edition of his works, complaining of the mistakes that had accumulated in previous editions. In about forty years, Galen's medicine and what he represented thus changed greatly. Even though Galen continued to be known – read, studied, and commented on – in Latin, the discovery of his Greek texts, provided by the 1525–6 Aldine, had strong effects, to the extent that two genuine works, *On the Problematical Movements* and *On the Parts of the Art of Medicine*, whose Greek originals had been lost and were preserved only in medieval Latin translations from Arabic or Greek, were now condemned as fakes.

The edition of 1541–2 became the first Giuntine of the glorious nine-edition series, which ran until the last one of 1625 and generated a huge profit for the publishing house. It brought to an end the period of Galen's first translations and inaugurated a phase when translations were continuously reprinted, remade, and corrected. In about twenty years, from 1541 to 1565, ten complete Latin editions of Galen's works were published in Venice, Basle, and Lyon, as were an amazingly large number of editions containing one, two, or more translations. Their number peaked in the 1540s with an average of fifteen a year, but the 1550s still saw as many as eleven editions being published yearly in numerous sizes and formats for a varied public that included students, professors, and educated people all over Europe.

Gadaldini was the editor of the four Giuntines that were published from 1541 to 1565, and were then copied or plagiarised by subsequent editions. He continued to add new texts of Galen and pseudo-Galen, he completed some translations, replaced others, and corrected and annotated nearly all volumes based on Greek manuscripts, which he never stopped seeking. His last edition (1565), the most outstanding of the series, contains an impressive number of marginal notes and brief introductions that collect his remarkable work and

the main contributions of other scholars of his philologically gifted generation, such as Agostino Ricchi (1512–64), Janus Cornarius, Conrad Gesner (1516–65), and John Caius (1510–73).

In 1543, shortly after collaborating with Gadaldini on the Giuntine of 1541–2, Vesalius published *De humani corporis fabrica*, his landmark anatomical treatise based on the direct observation and dissection of human cadavers, where he harshly criticised Galen's animal-based anatomy.⁴⁶ From then on, Galen's weaknesses and contradictions became more and more apparent both in anatomy and in other fields, and newer syntheses and more modern handbooks replaced Galen's texts in medical teaching. At the end of the 1550s the enthusiasm for editing and translating Galen waned, and in the 1560s the number of single editions declined to an average of four a year. At the same time, versions of and commentaries on Hippocrates attracted the attention away from Galen, and Galen the interpreter of Hippocrates became more interesting than Galen the physician.

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46 On Galen and Vesalius, see Nutton (Chapter 24) in this volume.

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‘Galenic’ Forgeries of the Renaissance: an Overview on Commentaries Falsely Attributed to Galen

Christina Savino

Galen¹ has left us a large number of commentaries – which occupy several volumes of the monumental edition by Karl Gottlob Kühn² – devoted to the exegesis and interpretation of the classical scientific *auctoritates*, particularly the so-called *Corpus Hippocraticum* and the Platonic writings. The titles listed in the *On my Own Books*, the first known bibliography, show that Galen wrote many more commentaries than we now have:³ some of them are not extant, others survive only in fragments and/or in Syriac, Arabic, Latin or occasionally Hebrew translations. As for the commentaries on Hippocratic works, thirteen of them survived, while those on *On Sores*, *On Head Wounds* and surgery are all missing.⁴ Nor do we have Galen’s commentaries on Plato’s *Republic* and the *Phaedo*, on Erasistratus’ *Fevers*, and on the early second-century AD empiricist Theodas of Laodicea’s *Introduction to Medicine* and *Capital Points*. On the other hand, some commentaries that have come down to us were falsely attributed to Galen during the Renaissance.⁵

In the Renaissance, as soon as antiquities began to be rediscovered and thoroughly investigated by the scholars, the classical texts were insistently and obsessively sought out, and Galen was no exception. Interestingly, as the Galenic medical system declined due to the new discoveries, especially in the anatomical field, Galen became more appreciated as a commentator on the Hippocratics rather than as an author in his own right. Thus, his commentaries enjoyed the greatest success. Medical humanists aimed to find as many commentaries as possible and developed an interest in the lost ones as well, which became *desiderata*. Just as the original commentaries had been produced by Galen upon the request of his audience, most likely pupils, so

¹ All English translations are my own.

² Ed. Kühn (1828–30) xv–xix.

³ Galen, *Lib. Prop.*, 6, ed. Kühn (1830) xix.33ff. = 9ff., ed. Boudon-Millot (2007) 159 ff.; Flemming (2008); Savino (2013).

⁴ Manetti and Roselli (1994: 1531, n.3).

⁵ Savino (2013: 29).

were they produced in the Renaissance, when printers and publishers tried to satisfy the intellectual needs of scholars and students of medicine.

In addition to the editions of Galen, the publication of unknown commentaries and *desiderata* represented a prestigious feature and a great philological enterprise that any editor was proud to announce in the prefaces. Sometimes it was a matter of substitution through new texts: an example is that of the philologist Fabio Paolini (1550–1606), who published a medical commentary on Thucydides' account of the Athenian plague (Thuc. 2.47–54) in 1603: this was based on the lectures delivered by Paolini at the Scuola di San Marco in Venice and was printed by the Giunta to replace Galen's commentary on the same subject, which turned out to be lost.⁶ In other cases the gap was filled by fabrication, with classical scholars employed to forge the unavailable works: this is the case with Giovanni Battista Rasario (1517–78),⁷ physician and translator of Greek texts, who in 1562–3 produced a new complete edition of Galen printed by Vincenzo Valgrisi, in Venice.⁸ This edition is remarkable because of the new order of the books and its new translations – more than one third of all its 154 translations were made by Rasario himself, who was one of the most prolific translators of Galen⁹ – but also for its forgeries. Planning a new complete edition of Galen at the height of his career, the printer Valgrisi had conceived an ambitious project aimed at competing with the famous *Giuntinae* of the new series.¹⁰ Therefore he employed this talented scholar, who could bring in something not known before, such as new Galenic commentaries.

In order to highlight the novelties of his edition, Rasario supplies a complete list, which is called *Index librorum, qui nuper in latinam linguam conversi sunt, a Ioanne Baptista Rasario, et qui hactenus impressi non erant, et nunc primum in lucem eduntur* and features, among many others, the following three translations: [51] Galen's *Commentary on Hippocrates' 'Humours'* (*Galenī in librum Hippocratis de humoribus commentarii III, nunc primum inventi, et impressi*); [54] *Commentary on Hippocrates' 'Epidemics VI'* (*In primum, tertium et sextum de morbis vulgaribus commentarii XIII. Quorum duos ultimos, et dimidium sexti in sextum nunc primum invenimus, et omnes latinitate donavimus*); [58]

6 See Lee (2015) and Brown (2003: 179–81).

7 On Rasario, see Bonino (1824: 193–6); Angius (1856: XVIII/4.684); Vaccari (1957: 128); Tiraboschi (1822–6: VII/2.1072).

8 On this edition, see Savino (2009; 2012).

9 Durling (1961: 298).

10 Fortuna (2005; 2012).

*On Plato's 'Timaeus' (In Timaeum Platonis fragmentum)*¹¹ – all of them (entirely or partially) fake.

1 *Commentary on Hippocrates' 'Humours'*

The *Commentary on Hippocrates' 'Humours'* was mentioned by Galen in the *On my Own Books* and in other works as well.¹² In spite of its early disappearance, knowledge of this commentary is preserved by Oribasios, who excerpted passages from it in the fourth century. During the Middle Ages the *Commentary* was translated into Syriac and Arabic; the Syriac translation was subsequently lost, while only fragments of the Arabic survive.¹³

The *Commentary* suddenly ‘reappeared’ in the Renaissance, when Rasario published his Latin translation both in the eighth volume of his complete edition of Galen and in an individual edition printed first in 1562 and then in 1567.¹⁴ The publication of the *Commentary on Hippocrates' 'Humours'* was understandably presented as a great discovery by Rasario. In the dedication letter to the complete edition of Galen, addressed to the Duke of Ferrara Alfonso II d'Este,¹⁵ the *Commentary* was widely praised and preferred to other Galen commentaries in virtue of its contents and stylistic features.¹⁶ In the preface to the individual edition of the *Commentary*, dedicated to his colleague Niccolò Sammiccheli, who is credited with an active supporting role, Rasario recalls the story of the work's rediscovery, which had taken place while the preparation of the complete edition of Galen was at a very advanced stage,

11 For the complete list, see Savino (2012: Appendix II, 442 ff.). All these translations were printed in the eighth volume of the edition that is entirely committed to the commentaries.

12 Galen, *Lib. Prop.*, 6, ed. Kühn (1830) XIX.35ff. = 9, ed. Boudon-Millot (2007) 160ff. See also Deichgräber (1972: 39–40); Manetti and Roselli (1994: 1532, n.3); Garofalo (2005: 447, n.17).

13 Sezgin (1970: n.79); Degen (1981: 150, n.70); Garofalo (2005; 2011b: 113–69); Fichtner (2017: n.94).

14 Respectively *Galenii In Hippocratis libros*, 1562 and *Claudii Galeni Pergameni Opera*, 1567; see also Durling (1961: 295, n.154).

15 On this preface, see Savino (2012).

16 Rasario (1562: 1.2v): *Quotus enim quisque est, qui ferre possit, quae saepe in commentariis in libros vulgarium morborum, et praedictionum, ut alios interim omittam, iterata, inculcataque sunt? at in his, quos nunc edimus, nihil est huiusmodi: est autem, mea quidem sententia, pura oratio, et Galeni maxime propria* ('How many times should someone bear things so often repeated and inculcated in the Commentaries on Epidemics and Predictions, not to mention the others? But in this [scil. commentary], which we publish, there is nothing like this; there is, in my opinion, pure speech and especially authentic of Galen'). See also Savino (2012: 431, n.71).

just in time for it to be translated and included in the monumental work. He writes about two Greek manuscripts as models for the Latin translation: one was defective and not particularly ancient, while another is said to have been very old (*vetustissimus*).¹⁷ In fact, however, the oldest two manuscripts of the *Commentary* – namely the Parisinus Coisl. 163 and its copy Parisinus suppl. gr. 2,¹⁸ which were both handled by Rasario and bear *marginalia* from the same *corrector*, who might be identified with Rasario himself¹⁹ – were produced on demand only in 1560, as an endorsement for the publication of the Latin text, by Andreas Darmarios, a professional scribe who was also in the business of producing and selling manuscripts.

Nonetheless Rasario's translation of the *Commentary on Hippocrates' Humours* enjoyed a great success being continuously in print from its first appearance: it was included in all the *Giuntine* of Galen from 1586 until 1625;²⁰ in the eighth volume of the *Opera Omnia* of Hippocrates and Galen edited by Chartier in 1639, along with the Hippocratic lemmata in Greek; and finally, for the first time together with the Greek text of the manuscripts, also in the edition by Kühn.²¹ It was only in the early twentieth century that the first suspicions on its authenticity arose, when Karl Kalbfleisch, who was in charge of preparing a critical edition for the *Corpus Medicorum Graecorum* (CMG), reported that the *Commentary* was a Renaissance forgery.²² Years later, in his investigations into the history of the text and the reception of the Hippocratic treatise on humours, Karl Deichgräber provided more philological evidence and identified the forger as Rasario.²³

More recently, attention has been focused on the making of the forgery. It has been pointed out that Rasario put the *Commentary* together by combining

17 See Savino (2012: 431, n.70).

18 See Devreesse (1945: 18–9, 146–7); Diels (1905: 103); Garofalo, (2009); Savino (forthcoming, a).

19 See Pietrobelli (2009: 104, n.63), where he pointed out that the *marginalia* in the Par. Coisl. 163 were written in the same hand in the Mosq. Sinod. 188 (Vlad. 498), which was used by Rasario for his edition of Oribasios; see below. Pietrobelli did not refer to the Par. Suppl. gr. 2, but I assume that the corrector is the same following Garofalo (2009: 202, n.14). If this is the case, a *specimen* of Rasario's handwriting should be found in the Par. Coisl. 163, fol. 23v.

20 See Durling (1961: 295, n.154).

21 Galen, [*Hipp. Hum.*], ed. Kühn (1829) XVI.1–488. See also Kühn's (1821–33: XVI.vii–ix) *prae-fatio* to Galen's *Commentary*, where he claims to have followed the text of a Greek manuscript made for him by his French colleague De Mercy for the purpose of his edition. This was the Lips. 56, which was copied from the Par. Coisl. 163 and its copy, Par. Faculté de Med. 14.

22 See Diels (1916: 138) and also Kollesch (1999: 217–18).

23 See Deichgräber (1972: 38–55).

quotations from Galenic works, mostly taken from Oribasios.²⁴ Rasario was very familiar with Oribasios, as he had translated and edited three works of this author between 1554 and 1558: the *Synopsis for Eustathios* (1554), the *Medical Collections* (1555), and the *For Eunapios* (1558).²⁵ It is not by chance that he had also dedicated his edition of the *Medical Collections* to Sammicheli, who had sent him two manuscripts.²⁶ Of these two, one has not been identified so far, while the other, which originally consisted of three volumes containing Oribasios' collected works, was in Moscow at a certain point after having been brought to Russia from the Iviron Monastery.²⁷ Today two out of its three volumes are still in Moscow – the Mosq. Vlad. 498 (*olim* Sinod. gr. 1.188, containing Oribasios' *Synopsis for Eustathios*) and the Mosq. Vlad. 499 (*olim* Sinod. gr. 1.189, containing Oribasios' *For Eunapios*)²⁸ – while the third, and most important to us for containing the *Medical Collections*, seems to be lost.²⁹ Still, we know that this manuscript has been used by Rasario, since its text, published

24 Kalbfleisch had been the first to point this out, as Diels reports (1915: 92; 1916: 138). The *corrector* (Rasario?) explicitly indicates the commentary's sources, in form of *loci paralleli*, in the internal margins of the Par. Coisl. 163.

25 Ed. Rasario (1554), (not after 1555), and (1558). See also Savino (2012: 415 ff.).

26 Rasario (not after 1555: praef., f. A ii): *Cum tu ... libros Oribasii misisses, quorum novem ad Eustathium filium missi, Latini a me facti anno superiore prodierunt in lucem, decem septem vero supersunt ex magno illo septuaginta librorum volumine, quod totam in se artis materiam complectebatur, quod ad Iulianum Caesarem scriptum fuerat, quatuor denique ad Eunapium ... Tamen vix audebam aggredi eam provinciam, ad quam rite conficiendam, maiore otio, atque copia librorum manu scriptorum opus esset; cum praesertim ego in publico munere quotidie versem, et duo tantum exempla librorum Oribasii mihi suppetant: quorum alterum mihi tu dedisti, alterum vero est apud virum clarissimum, et Senatorem gravissimum, Matthaëum Dandulum: a quo cetera omnia, ut ego quidem puto, tanquam a fonte, manarunt* ('You ... have sent me thirty-one books of Oribasios: of which, the nine books to his son Eustathios – they were translated by me into Latin and published last year – the seventeen books still extant from the great volume of seventy, that includes the entire matter of medicine and was dedicated to the Emperor Julian; then, the four books to Eunapios ... But I hardly dared to undertake this task [scil. to edit Oribasios], for it required – to be properly done – more time and availability of manuscripts, while I was busy everyday with public functions and had only two manuscripts of Oribasios; of them you gave me one, while the other is with the illustrious and honourable senator Matteo Dandolo. From the latter, as from a source, all the others depend, in my opinion. And even if this manuscript is the oldest of all those I could see in this great city, though, you know how many passages it contains, in which it is required to interpret, or guess, or – worse of all – to conjecture').

27 See Pietrobelli (2009: 109).

28 See Matthaëi (1805: I.123–4).

29 See Matthaëi (1805: II.284–5). As this volume cannot be identified with any other extant manuscript listed by the later catalogues of the Synodal Library, we have to suppose that it was already missing in the nineteenth century, and more precisely that its loss occurred

in 1808,³⁰ features many readings in common with Rasario's Latin translation of the *Medical Collections*;³¹ moreover, according to the catalogue, the manuscript showed frequent corrections and *marginalia* by the same hand as that of the *corrector* of the Parisinus Coisl. 163 and the Mosq. Vlad. 498, which is supposed to have belonged to Rasario himself.³² Since Rasario's translation of the *Medical Collections* shares many errors and peculiar textual features with the Latin text of the *Commentary on Hippocrates' 'Humours'*, we are allowed to assume that the lost manuscript of Oribasios provided by Sammiceli and used by Rasario as a model for the translation was also employed to forge the false commentary³³ – which would possibly explain the reason why Rasario dedicated to Sammiceli the single edition of the *Commentary*.³⁴ According to recent studies, Rasario first wrote a Latin version of the *Commentary*, intended for publication, and then a back-translation into Greek, which is preserved by the manuscripts.³⁵

2 *Commentary on Hippocrates' 'Epidemics VI', Books VI, VII, VIII*

Both in his complete edition of Galen and in the individual edition of 1562, Rasario published together with the *Commentary on Hippocrates' 'Humours'*, a new fragment of the *Commentary on Hippocrates' 'Epidemics VI'* supposedly belonging to the seventh, the eighth and the very end of the sixth book of the work.³⁶ Later the same fragment was printed in the sixth *Giuntina* of 1586, edited by Girolamo Mercuriale (1530–1606).

The *Commentary on Hippocrates' 'Epidemics VI'*, which in its original version actually consisted of eight books,³⁷ had been transmitted without the

before the catalogue was completed, see the catalogues of the Synodal Library of (1894); and Fonkič and Poljakov (1993).

30 Matthei (1808: v–viii).

31 This means that Matthei was probably the last one who saw it, and it would not come as a surprise if we found out that its loss was related to Matthei himself, as he removed many other manuscripts from the Synodal Library. On Matthei and his thefts, see von Staden (1996: 411–14).

32 It must be remembered that the *corrector's* hand in the Mosq. Vlad. 498, in turn, is the same as that in the margin of the Par. Coisl. 163 according to Pietrobelli (2009: 104, n.63).

33 See also Savino (2012: 428ff.).

34 See Savino (2012: 431).

35 See Garofalo (2009: 202–3, and particularly n.14).

36 Durling (1961: 295, n.152 (4) e, f).

37 Galen, *Lib. Prop.*, 6ff, ed. Kühn (1830) XIX.35ff = 9, ed. Boudon-Millot (2007) 160ff. The last part only survived in Arabic, see Pfaff in Wenkebach (1956: 353–507).

final part so far. The previous Latin translations ended with the sixth book,³⁸ and so does the Greek text,³⁹ which was edited for the *CMG* by the German scholar Ernst Wenkebach.⁴⁰ When Wenkebach undertook the preparation of his edition of the *Commentary on Hippocrates' 'Epidemics VI'*, he was aware of Rasario's work⁴¹ and quite adamant about expunging the fragment as not authentic.⁴² In the preface he used very harsh words for Rasario and accused him of having perpetrated fraud as he would have fabricated the new fragment of the *Commentary* by mixing various passages from one of the most important late commentators of the sixth century, Palladios, who has left us *scholia* on *Epidemics VI*.⁴³ Eventually Rasario would have put together more than two books of commentary yielding what Wenkebach called *illius veteratori dolosi vilissimum opus a temporibus medicinae Hippocratis renatae ad hanc aetatem intactum inviolatumque*. Although some suspicions had already been raised by scholars Hermann Schöne and Walter Bräutigam, the hypothesis was confirmed by Wenkebach and his colleague Franz Pfaff by collating the Latin text with the Arabic translation. It became clear at that point that Rasario had plundered the late compilers, who were a treasure trove of quotations and easy to handle thanks to their thematic division into chapters.

3 *Commentary On Plato's 'Timaeus'*

Galen's *Commentary On Plato's 'Timaeus'* is preserved only in one Greek manuscript, namely the Parisinus gr. 2383.⁴⁴ Moreover, the text has come down to us both in a Syriac and in an Arabic translation by Ḥunayn.⁴⁵ In the Renaissance two Latin versions were produced: the first was made by the scholar and superintendent of the Giunta printing house Agostino Gadaldini (1515–75), while the second, as we already know, by Rasario for Valgrisi.⁴⁶ Rasario's translation

38 Durling (1961: 295, n.152 (4) a–d); Wenkebach (1956: xxii ff.).

39 Diels (1905: 104, n.152).

40 Galen, *Hipp. Epid. VI*, ed. Wenkebach (1956) 3–351.

41 From 1916 Wenkebach worked on Galen's *Commentary* on *Epidemics* providing a series of prolegomena, see Wenkebach (1916; 1925; 1928; 1934; 1936), all published before his latest edition (1956). Furthermore, other colleagues and editors of Galen had encountered Rasario earlier, as for instance Schröder (1934).

42 Wenkebach (1928; 1956: xxiii–xxiv).

43 Palladios, *Scholia on Hippocrates' 'Epidemics VI'*, ed. Dietz (1834) 11.1–204; Dickey (2015: 483); Ihm (2002: 177–9); Joosse and Pormann (2012: 113).

44 Diels (1905: 129).

45 Ullmann (1970: 64, n.115); Sezgin (1970: 126, n.90); Degen (1981: 155, n.97).

46 Durling (1961: 293, n.132 a, b).

was more voluminous than Gadaldini's, and so to speak new, as it includes both the beginning and the final part of the text, which had been lacking so far. Nonetheless, it was not even taken into account for the determination of the critical text (*constitutio textus*) by the editor Heinrich Otto Schröder, who seemed to be aware of Rasario's standard practice. In fact, he explained in the preface of his edition for the *CMG* that Rasario had increased the extent of the text by drawing passages from certain philosophical writings by Cicero and pretending cunningly (*callide*) that they were excerpts from Galen (*excerpta Galeni*).⁴⁷ In addition, Schröder produced a table of passages showing the forged parts of the commentary by Rasario (*Partes commentarii a Rasario fictae*) in order to retrace the pieces of the puzzle in Rasario's translation and expose the making of the forgery.⁴⁸

The importance of Cicero as a model of proper Latin becomes predictable when it comes to well-educated readers and scholars in the Renaissance,⁴⁹ but it is particularly evident in the case of Rasario, because he modelled his own style of writing on Cicero's with regard to the vocabulary, the word order, and the philosophical view, as it has already been pointed out.⁵⁰ Moreover, his use of Cicero's writings confirms that Rasario used to work primarily with Latin fragments, both original text and translation, and then, if required, back-translated them into Greek.

4 *Commentary on Hippocrates' 'Nutrition'*

However, not all of Rasario's forgeries were published by him. The professor of medicine Girolamo Mercuriale (1530–1606), who edited the fifth *Giuntina* of Galen in 1576–7, published two newly rediscovered commentaries on the Hippocratics,⁵¹ that is, several fragments of the *Commentary on Hippocrates' 'Nutrition'*,⁵² and a short fragment from the second book of the *Commentary on Hippocrates' 'Epidemics II'*,⁵³ both of them provided by Rasario.

47 See Schröder (1934: xxii).

48 See Schröder (1934: Appendix I, 85 ff.).

49 Nauert (1995: 52); Akkerman et al. (1999: 139).

50 Savino (2009: 196, n.23).

51 See Fortuna (2008:), who reports the passage of the preface where Mercuriale praises the new commentaries.

52 Galen, [*Hipp. Alim.*], ed. Kühn (1828) xv.224–417.

53 Galen, *Hipp. Epid. II*, 29–40, ed. Kühn (1828) xviiA.374–83.

Galen considered the treatise *Nutrition* (*De alimento*) as authentic and as worthy of mention, as many quotations attest.⁵⁴ He also mentions his own commentary on *Nutrition* in many passages of his other writings.⁵⁵ Still, the commentary had been somehow dropped from use and was subsequently lost. Very little of it survives: a few *scholia* preserved in the manuscript of the Hippocratic collection M (Marcianus gr. Z. 269) and some passages that were included by Maimonides in his *Aphorisms*; another fragment might be contained in P. Flor. 115.⁵⁶ Moreover, the *Commentary* was translated both into Syriac and Arabic; the Syriac translation by Ḥunayn is extant, while only fragments of the Arabic by Ibn Riḍwān survive.⁵⁷

The fragments published by Mercuriale were translated into Latin by Rasario.⁵⁸ In the dedication letter of the translation, dated 27 May 1575, Rasario wrote that he was provided with the Greek manuscript of the *Commentary* by one of his students in Pavia, the young Sigismund, who was born to a noble family of Cracow and had at his disposal ancient manuscripts from the famous library of the king of Hungary, Matthias Corvinus.⁵⁹ Rasario had been stimulated by Mercuriale to make a Latin translation out of it with the purpose of the publication. Mercuriale was also able to publish both the Greek text and the Latin translation, in synoptical columns, despite the subsequent loss of the manuscript.⁶⁰ Later on, Rasario's translation has been reprinted in the later editions until Kühn, being also classified as authentic by Ackermann.⁶¹

In the early twentieth century we find the story of the Greek manuscript of the *Commentary* told by Rasario again in the catalogue of medical manuscripts accomplished by Hermann Diels.⁶² Just as for the *Commentary on Hippocrates' Humours*, however, Diels had to report that the *Commentary* was found not to be authentic by Axel Nelson, in the annual scientific report on the *Corpus Medicorum Graecorum*.⁶³ It took decades, though, and another very accurate historical-philological investigation by Deichgräber as well to formulate the hypothesis that Rasario himself could have falsified the text.⁶⁴ At that point

54 Mewaldt (1909: 121, n.1); Boudon-Millot (2007: 160–1).

55 Anastassiou and Irmer (1997–2012).

56 Manetti (1985).

57 Respectively Sezgin (1970: 137, n.145); Degen (1981: 150, n.68); Garofalo (2012). See also Kessel (2016: 178).

58 Durling (1961: 294, n.150).

59 Galen, ed. Mercuriale (1576) x1.A11r-v.

60 Jouanna (2004: 5).

61 Ackermann (1821: clxxvii).

62 Diels (1905: 102).

63 Diels (1915: 128ff).

64 Deichgräber (1973: 12–13, n.12); Raiola (2010); Garofalo (2012: 125ff.).

Deichgräber recalled Schröder's verdict on Galen's *Commentary on Plato's 'Timaeus'* that we have already mentioned. He does not mention Wenkebach, for example, but of course each of the *prolegomena* and the critical editions named above was a step towards increasing our knowledge on the subject.

5 *Commentary on Hippocrates' 'Epidemics II'*

Galen's *Commentary on Hippocrates' 'Epidemics II'*⁶⁵ was already incomplete at Ḥunayn's time, when it was translated into Arabic,⁶⁶ and was completely lost later on. The small fragment published by Mercuriale – according to his preface to the readers – was preserved only in one Greek manuscript, which had been provided by Gadaldini.⁶⁷ As for the *Commentary on Hippocrates' 'Nutrition'*, Mercuriale decided to publish the text of the manuscript, which represented the final part of the second book of the *Commentary on Hippocrates' 'Epidemics II'*, together with his own translation, in two synoptical columns.⁶⁸

A somewhat larger fragment of the *Commentary*, though, was published for the first time in the sixth *Giuntina*, edited in Venice in 1586 by Giovanni Costeo (1528–1603), and then in all later *Giuntine* until 1625.⁶⁹ This text, which was translated by Rasario, bears the title *In secundum Hippocratis de morbis vulgaribus librum Commentarius secundus, novissime repertus & a Io. Baptista Rasario e Graeco in Latinum sermonem translatus*, but in fact comprises not only the second, but also the third book of the commentary;⁷⁰ still it looks defective and shows asterisks to indicate *lacunae* or illegible parts in the source.⁷¹ Looking at the index, one would expect this fragment to be located in its natural

65 Galen, *Lib. Prop.*, 6, ed. Kühn (1830) XIX.35ff = 9, ed. Boudon-Millot (2007) 160ff.; Fichtner (2017: 72, n.97).

66 See the bibliographical references included in Fichtner's study and also Pfaff in Wenkebach (1934: 155 ff.); Alessi (1996; 2012); see also Garofalo (2011a).

67 Mercuriale (1576) I.Avr.

68 Stefania Fortuna has communicated to me that actually it already had been published in Latin by Gadaldini, in the *Giuntina* of 1556, as a supplement to Galen's treatise *On Affected Parts* 4.3, which in turn contains a long quotation from *Epidemics II* (fol. 23v). Herein the fragment had been attributed to Galen, but this is surely not authentic, as it does not match with the extant Arabic translation. Its origin may be connected with a group of manuscripts of the *On Affected Parts* that contain *scholia*. Most likely Mercuriale back-translated it into Greek.

69 Durling (1961: 295, n.152 (2)); I will refer to this text hereafter as Costaeus (1586).

70 The *Commentary on Hippocrates' 'Epidemics II'* comprised six books according to Galen himself, see Galen, *Lib. Prop.*, 6, ed. Kühn (1830) XIX.36ff. = 9, ed. Boudon-Millot (2007) 161.

71 Similarly with the *Commentary on Hippocrates' 'Humours'*.

position, that is, between the *Commentary on Hippocrates' Epidemics I* and that on *Epidemics III*, both of them already published, but it actually follows the *Commentary on Hippocrates' Epidemics* as it had circulated before the publication of the new parts, that is, *Commentary on Hippocrates' Epidemics I, III, and VI* in a row. After these we find also the fragment of the *Commentary on Hippocrates' Epidemics VI*, translated and already published by Rasario.⁷² Most likely the placement of the newly rediscovered parts at the very end was meant to emphasise them and make more evident the increased size of the *Commentary* by means of their addition.

In 1617 a new Latin translation of the *Commentary* was published, together with the Greek text, which was hitherto unknown, by the Cypriot scholar John Sozomenos (1578–1633).⁷³ Sozomenos' edition was intensively investigated by Wenkebach at the time when he was preparing the critical edition of the *Commentary on Hippocrates' Epidemics II* for the *CMG*. As a result, Wenkebach wrote two articles, eventually classifying this text as a Renaissance forgery. In the first article, published in 1917, Wenkebach claimed that the text, fully inconsistent with Galen's way of writing (*usus scribendi*), was a forgery probably made by its editor himself, namely Sozomenos; in the second article, published in 1925, he strengthened his position and argued through an accurate textual analysis of selected passages that Sozomenos' forgery must have been based on (the retroversion of) the *Commentary on Hippocrates' Epidemics II* written in Latin by the physician and philologist from Metz Anuce Foes (1528–91), which was published in 1560.⁷⁴

Such a conclusion was fully understandable at that time, when Wenkebach failed to consider Rasario's text (although he did know and quoted it in his first article!). Nonetheless, if we compare all three of the commentaries, we will note that they feature fundamentally the same contents.⁷⁵ Sozomenos' dependence upon Rasario, on the other hand, is made clear from those passages in which Wenkebach spotted the 'laute Freiheiten' against his model Foes, as the main differences between the two become plainly understandable through

72 See below.

73 See Rudt De Collenberg (1990). This translation does not feature in Durling's *Census* (1961; 1967; 1981), inasmuch later than 1599. It has to be noticed that both translations by Rasario and Sozomenos have been printed in the complete edition of Hippocrates and Galen by Chartier (1638–9).

74 Wenkebach (1917: 23 ff.; 1925: 18 ff.); Manetti and Roselli (1994: 1548, n.67).

75 Striking similarities can be found, for instance, in the incipit, cf. Foes (1560: 204): *Toto igitur anno, quem describit, impense squalido et sicco*; Costaeus (1586: 204v): *cum igitur totus annus esset, ut ipse describit, valde squalidus, et valde siccus*; Sozomenos (1617: 105): *totoque anni cursu, quem describit valde siccum & aridum*.

just as many textual features or mistakes of Rasario's text.⁷⁶ Moreover, all passages where Rasario scattered asterisks to indicate textual lacunae or illegible parts in the Greek source look the same in Sozomenos' edition. Therefore, in this case Wenkebach was wrong both in attributing the paternity of the forgery and in dating it, for Sozomenos may have known Foes' commentary, but he clearly relied on Rasario's text for the Latin and back-translated it into Greek. Surely Sozomenos did not act in good faith when intentionally creating a fake ancient Greek text,⁷⁷ but once again the forgery of Galen's *Commentary* was due to Rasario. As for Foes' commentary, it had to be associated with Rasario too. Rasario's and Foes' commentaries frequently agree, presenting the same arguments and parallels and sharing the same lexicon. Nevertheless, while Foes explicitly acknowledges his sources, especially when turning to Galen's commentaries in order to interpret Hippocrates, Rasario's text does not provide such reports and explanations, as this would be inconsistent in so many respects.

For instance, in Foës' commentary,⁷⁸ the author mentions as a possible rendering for the Greek *palên alphitōn* ('meal porridge') the Latin *polentam* according to Pliny (*ex Plinio vertere potuimus*) and discusses the matter; Rasario, on the other hand,⁷⁹ employs the same term but avoids commenting on it and above all reporting any Latin model, as that would not have been appropriate for Galen. Most notably, when Rasario distances himself from Foës, he either relies on other Greek sources, such as the late compilers – for example where as a *pendant* for *est et quibusdam* ('also according to others') in

76 Wenkebach points out that Sozomenos failed to employ some elements that are included in Foes' text, such as the *sudorum proluviæ* and the *rigoris concussio*, both of them *effugia febrium* (cf. Foes, 1560: 204: *Unde praeter sudorum proluviem et rigoris concussationem, quae sunt febrium ardentium effugia*); on the other hand, he mentions the absence of vomit (cf. Sozomenos, 1617: 105: *praeterea vero vomitus aberant*), omits the qualification of 'foamy' related to excrements (Foes, 1560: 204: *spumantibus*) and adds that of 'poor in bile' (cf. Sozomenos, 1617: 105: *minimeque biliosis*), but all these peculiarities depend actually upon Rasario's text (Costaeus, 1586: 204v: *Praeterea vero non vomebant: et alvi tenuibus, aqueis, et bile carentibus excrementis turbabantur*). I have presented a more detailed textual analysis of this passage at the Conference on Pseudo-Galenic texts organised at the Warburg Institute in London by Caroline Petit (14–15 May 2015). A written version of the paper will be included in the proceedings, which are currently in preparation (Savino, forthcoming, b).

77 It must be noticed, by the way, that the Greek manuscripts listed in Diels' catalogue (1905: 104) do not transmit the *Commentary on Hippocrates' Epidemics II*.

78 Foes (1560: 128).

79 Costaeus (1586: 198r).

Foës,⁸⁰ Rasario reports an alternative explanation preferred by *aliis*,⁸¹ namely by 'other physicians', which is identical with a passage transmitted by Paul of Aegina⁸² – or produces inconsistent claims – this happens with the passage where, on the one hand, Foes mentions Hippocrates' *Airs, Waters, and Places* and also *Epidemics VI*,⁸³ and Rasario adds *ac nos easdem sumus interpretati* ('and we have commented upon them') to that,⁸⁴ thus openly alluding to Galen's *Commentary on Hippocrates' 'Airs, Waters, and Places'*, without considering that it was accomplished only later than that on *Epidemics II*. Summarising, Rasario also created this fake commentary excerpting quotations, as usual, mostly from Galen and Hippocrates, but also from the late compilers, and assembling them like pieces of a jigsaw puzzle. What is new about the making of the forgery is that he also plundered a contemporary's work, that is, Foes' commentary on *Epidemics II* as a starting point for building up pieces and connections between the quotations.

6 Conclusion

At the time of his last edition, in 1956, commenting on the making of the false fragment of the *Commentary on Hippocrates' 'Epidemics VI'*, Wenkebach calls Rasario a *veterator dolosus* ('a crafty, skilled deceiver') and wrote that he would have had a *subdola natura* ('craftily, malicious nature') and a *vituperabilior improbitas* ('quite blameable dishonesty'),⁸⁵ even if at that time the research on this subject was still in progress. It was undoubtedly through the philological investigations on the *Corpus Medicorum Graecorum*, in fact, that Rasario has become notorious as a forger, but it took a long time to unveil his secrets. Today we know Rasario's standard practice, his intellectual background, his circle and network, his sources, his manuscripts, and perhaps even his handwriting. We also know that the Renaissance was a great age of literary forgery, in which highly talented scholars, such as Erasmus and Lorenzo Valla, applied themselves to falsification.⁸⁶ As a result we are rather prone to see this as a sophisticated and scholarly high-performance achievement inasmuch as it required skills, care, and imagination as 'the forger must give his text the

80 Foës (1560: 296).

81 Costaeus (1586: 210v).

82 Paul of Aegina, *Medical Epitome*, 4.24.1.5, ed. Heiberg (1921) 345.26 ff.

83 Foës (1560: 152).

84 Costaeus (1586: 200v).

85 Wenkebach (1956: xxiv).

86 Ehrman (2013: 25).

appearance – the linguistic appearance as a text and the physical appearance as a document – of something from a period dramatically earlier than and different from his own.⁸⁷ Hence, Rasario deserves acknowledgement for having contributed significantly through his talent and his excellent language skills to updating and expanding the *corpus* of the Latin Galen in the Renaissance, even if not always in an exactly decent way.

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87 Grafton (1990: 44–5).

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Renaissance Galenism, 1540–1640: Flexibility or an Increasing Irrelevance?

Vivian Nutton

The history of the reception of Galenism frequently presents the period from 1540 onwards as one of continuous decline, as first one and then another set of Galenic beliefs was attacked and then discarded. The publication of the Aldine edition of 1525–6 had the paradoxical consequence that, after a brief period of enthusiastic acceptance, Galen was replaced by other idols, most notably Hippocrates, as his weaknesses were progressively revealed. Early modern European medicine is thus defined by its emancipation from Galen, whose schematism and theoretical biases are seen as having stifled the progress of medical learning. There is much to be said for this interpretation. The great outflow of translations of Galen in the 1530s and 1540s swiftly slowed to a trickle, and was soon overtaken by the number of translations of and commentaries and Hippocratic writings. The appearance of the *Fabric of the Human Body* (*De humani corporis fabrica*) of Andreas Vesalius (1514–64) in 1543 demanded a new view of the human body, and William Harvey's 1628 publication of his discovery of the circulation of the blood resulted eventually in the abandonment of the Galenic ideas on human physiology.¹ At the same time, the radical ideas of Paracelsus, from the 1560s onwards, offered a vastly different understanding of the body and its processes in sickness and in health, and attracted many adherents in northern Europe. But, as recent scholarship has shown, these challenges to the authority of Galen often resulted in compromise rather than total victory, and medicine which had obvious origins in Galenic thought continued to be taught in European universities and put into practice well into the nineteenth century. One might dismiss as unenlightened the learned Greek physician who in the mid nineteenth century made substantial notes in his copy of the 1538 Basle edition of Galen's complete works (now in the Thomas Fisher Rare Books Library of the University of Toronto, classmark jah f 00954), but Galenic observations of the pulse continued to find their way into

¹ Vesalius (1543); Harvey (1628).

standard textbooks of sphygmology almost into the twentieth century, long after doctors had given up believing in Galen's exposition of blood flow.²

Such a linear account of the decline of Galen and Galenism also leaves little room for important qualifications. Many of those who developed new ideas were either themselves influenced by Galen or found little difficulty in encapsulating them within a Galenist framework. Even among the followers of Paracelsus there were not a few who rejected his cosmology and theories of illness in favour of applying his remedies in a Galenic context. Whether or not one agrees with David Wootton's denunciation of the ineffective, and even deadly, nature of Galenic medicine, it is also true that the alternatives, Paracelsianism included, were equally fallible, and lasted for fewer years.³ Above all, the term 'Galenist' is open to a variety of interpretations, from those who rejected anything not accepted by Galen himself to those who believed in little more than a theory of humours and in the body as constantly subject to imbalances of one sort or another. While the theory of humours became generally associated with the name of Hippocrates, as Galen himself would have wished, its basic outlines remained those laid down by Galen, and the renewal of interest from the 1550s in texts from the Hippocratic Corpus only added to its authority.

Galenic medicine remained at the very centre of European learned medicine, as Ian Maclean has clearly shown.⁴ Its ancient texts, partly because of Galen's immense productivity and his tendency to produce ideas off the cuff, continued to provide opportunities to explore alternatives. Giulio Alessandrino (1506–90), for instance, devoted a whole book to Galenic contradictions, ending with an encomium of his Greek predecessor.⁵ The Veronese Galenist physician Girolamo Fracastoro (1483–1553) suggested that several diseases, most notably plague, measles, and syphilis, were spread by little seeds of 'contagious' disease either directly from person to person or indirectly by fomites. He himself published his suggestion as a continuation of a discussion of ideas on sympathy and antipathy, in which he drew on many ancient sources. Twentieth-century historians, brought up on the theory of germs and bacilli, hailed this as a precursor of a theory of specific diseases and bemoaned this as an idea whose time had not yet come. But far from being neglected, Fracastoro's ideas and his new vocabulary of contagious disease were widely known for a generation or more, and were easily adopted by physicians around Europe. That they fell out of favour was less the result of their novelty than of the ease with which they

2 Broadbent (1890: 5–6). See also Tassinari (Chapter 26) in this volume.

3 Lonie (1985); Wootton (2008).

4 Maclean (2002).

5 Alessandrino (1548).

could be incorporated into a broader Galenic framework of epidemic disease that emphasised both individual receptivity and climatic causality.⁶

The career of Andreas Vesalius (1514–64) offers another example of the flexibility of Renaissance Galenism.⁷ The necessity of dissection and an understanding of the anatomy of the body was a shibboleth of Renaissance Galenism, and the introduction of a regular anatomical display into university teaching in many European universities was often owed to followers of Galen.⁸ Alessandro Benedetti in 1502 had produced the first Hellenising treatise on the subject, provocatively subtitled *Anatomice*, and the Paduan professor Berengario da Carpi (d. 1530) had incorporated much Galenic information into his 1521 commentary on Mondino and his 1522 *Introduction to Anatomy*.⁹ He also revised an earlier Latin translation by Demetrios Chalkokondyles of Galen's *On Anatomical Procedures*, whose appearance in 1529 in a volume of Latin translations marked a major step in the dissemination of Galen's ideas on the body. Far more influential, however, was the 1531 translation by Johann Guinter (1497–1574), published in Paris by Simon de Colines.

The Paris medical faculty had shown little interest in dissection before 1526, when it acquired a copy of the Aldine, but within a decade all had changed. Young members of the faculty, such as Andreas Laguna (1499–1546) and Guinter himself, were writing their own student guides, while Jacobus Sylvius' lectures on anatomy attracted huge and enthusiastic crowds.¹⁰ Vesalius, a medical student who had developed an interest in dissection while a young man in Brussels and Louvain, shared this enthusiasm, and was employed as the dissector by Guinter in his lectures of 1535–6 as well as in his private displays. On his return to Louvain, he dissected at least one human corpse before he left for Padua in 1537. There, immediately after obtaining his doctorate in December, he was appointed to teach anatomy and surgery. As a textbook for his first course he recommended Galen and his master's 1536 textbook, the *Principles of Anatomy According to Galen*, but for his second course the following year he produced a set of printed drawings, the *Six Anatomical Plates*, as well as a revised version of the *Principles*.¹¹

6 Nutton (1990b); Pennuto (2008).

7 O'Malley (1964); Joffe (2014).

8 French (1999).

9 Benedetti (1503); Berengario (1521; 1522); Ferrari (1996; 1998).

10 Nutton (2003).

11 Guinter (1536); Vesalius (1538a; 1538b); Singer and Rabin (1946); Nutton (2015). Nutton (2017) provides an English translation of the 1538 *Principles*, along with a substantial introduction that expands on the following paragraphs. Nutton (2018a); the whole of this issue of the *Journal of Medieval and Early Modern Studies* is also relevant.

Like Berengario and the Venetian Niccolò Massa (d. 1569), Vesalius made several discoveries that added to or contradicted what Galen had said, for example the true pericranium and the seminal vesicles, and substantially revised Guinter's earlier sections on the legs and the intestines. All these corrections could clearly be accommodated within Galenism, and most were adopted by Guinter himself in his own revision of 1539.¹² Vesalius annotated his own copy in preparation for a further reedition, but by 1540 he had changed his mind, and begun writing his major work, *The Fabric of the Human Body* (*De Humani Corporis Fabrica*). Reports of his Bologna lectures in 1540 show an increasingly critical attitude towards Galen, but they clearly did not discourage his Padua colleague, Giovanni Battista da Monte (1498–1552), the leading Galenist of the age, from enlisting his aid to revise Guinter's Latin version of *On Anatomical Procedures* and other anatomical texts for the Giuntine edition of the *Opera Omnia* of 1541–2.¹³ Others regarded Vesalius as a distinguished follower of Galen, and even in early 1543 the Galenist translator Janus Cornarius (1500–58) could send him his warm regards.

The publication of *The Fabric* in summer 1543 provoked very varied reactions.¹⁴ Several of those had known him in Paris, like Jacobus Sylvius (1478–1555), or in Padua, like the Englishman John Caius (1510–73), responded angrily to what they saw as slurs against Galen and their colleagues, for, despite Vesalius' repeated affirmations of his respect for Galen, his repeated criticisms, expressed in vigorous language, conveyed a very different impression. Cornarius struck out the name of Vesalius from his copy of Galen with such force that the marks can still be read through several folios. Their anger was increased by the knowledge that some of the positions criticised by Vesalius he had himself supported, and even introduced, in 1538. Massa commented sourly that Vesalius was only doing what he and many others had already done, and his demand that the human body could only be discovered through human dissection was idealistic at best and in context deceitful, for Vesalius had himself made great use of animal dissection.¹⁵

Others, not only influenced by the brilliant interplay of detailed text and frequent and large-scale illustration, were much more enthusiastic. Younger anatomists in Italy, Germany, and Spain eagerly followed Vesalius' example, rightly noting that he was putting into practice a programme that Galen himself had

12 Guinter (1539), with Nutton (2017).

13 Eriksson (1959). On early printed editions and translations of Galen, see Fortuna (Chapter 22) in this volume.

14 Vesalius (1543; 1555); Richardson and Carman (1998–2009); Garrison and Hast (2013), with substantial historical introduction.

15 Massa (1550: 58r).

advocated but could not carry out himself.¹⁶ Galenic anatomy was quickly adopted in all Spanish medical schools, except in Barcelona.¹⁷ At Wittenberg, Philip Melanchthon (1497–1560) consulted an old friend, Leonhard Fuchs of Tübingen (1501–66), before choosing to base the long anatomical section of his revised *The Soul* (a set text for all Wittenberg students) on Vesalius. He owned and read a copy of the *Fabric*, which was also bought by several of his colleagues in both medicine and philosophy.¹⁸

By the time Vesalius came to produce a second edition of the book in 1555, he had responded acerbically to criticisms from Paris and had discovered yet more Galenic errors. He also corrected in favour of Galen some of his own mistakes that had been pointed out by Caius and Massa, and a long section in his notes on the organ of smell, made sometime after 1555, shows a greater willingness to accept Galen's views.¹⁹ But by the time of his death in 1564, Vesalian anatomy had become broadly adopted, as the basis for a continued Galenic medical practice.²⁰ There were exceptions; Parisians were still hesitant, while John Caius, ever the conservative, continued to believe in Galen's superiority.²¹ In Spain, Luis Mercado (1520–1606), a professor of medicine at Valladolid, used his position as *Protomedico*, the royal superintendent of medical services, to ban Vesalian anatomy and institute a return to some of the books of *On the Function of the Parts of the Body*, largely because he believed that the new anatomy contributed nothing to medical practice.²² But this reversion to Galen was unusual, and by the end of the century the debate over the propriety of animal anatomy had shifted towards a compromise. At Padua, Fabricius of Aquapendente (1533–1619) carried out a long series of dissections of all kinds of animals, including humans, in what Andrew Cunningham called the 'Aristotelian project' to discover the purposeful function of organs.²³ Others continued to use animals because of the problems involved in acquiring human corpses and in seeing the details during a public display in an

16 Barcia Goyanes (1994) polemically shows how much of the *Fabrica* is owed to Galen; Boudon-Millot (2016).

17 Skaarup (2015).

18 Nutton (1990a:); Helm (2001). Margócsy, Somos and Joffe (2018), a wonderful resource for tracing immediate responses to Vesalius.

19 Nutton (2012).

20 Cuneo (1564) delivered a scathing attack against Francesco dal Pozzo for including him (and several others) who made minor corrections to Vesalian anatomy with the diehard Galenists who rejected it entirely.

21 Caius (1570: 6r–11r). Nutton (2018b).

22 Skaarup (2015).

23 Cunningham (1997).

anatomical theatre, but were now more careful in drawing conclusions from what they found in dogs or goats.

One of those most influenced by Fabricius was William Harvey (1578–1657), an Englishman who went from Cambridge to study in Padua and who returned to London.²⁴ A marriage to the daughter of a leading physician led to an appointment as physician to St Bartholomew's hospital and to his lectures on anatomy to medical students. He became relatively swiftly a member of the College of Physicians of London, an elite body convinced of the superiority of Galenic medicine and with pretensions to control all medicine within London and beyond. Harvey, although never President, was several times Censor, where his examination of candidates in the works of Hippocrates and Galen was notoriously rigorous. His medical practice was strictly Galenic, and in his old age, if we are to believe John Aubrey, he was so far behind the times that he was considered to danger to his patients and consulted only by the elderly.²⁵

Harvey's great passion was for dissection, particularly in order to discover the construction and workings of the body. Trained in Italy, he showed in his lectures his awareness of the improvements that had been made even to Vesalian anatomy since the 1550s, and, like almost all younger anatomists, he accepted the demonstration, first announced by Realdo Colombo in 1559, that blood passed from one side of the heart to the other via the lungs.²⁶ This theory eliminated one of Galen's contentions, that there were permeable pores in the septum of the heart through which blood seeped, but did not at first challenge the traditional view that venous and arterial blood were largely separate, each having its own system of ducts and flowing respectively from the liver and the heart. When and how he came to conclude that blood circulated around the whole body are contentious issues that do not need to be resolved here, save that Harvey implies that he had been thinking about the problem for some time before publishing his theory in 1628.

The title of his famous book, *Anatomical Exercises on the Movement of the Heart and Blood in Animals*, immediately makes two points that are sometimes forgotten.²⁷ Harvey was continuing Fabricius' method of investigating the workings of all living creatures, and not just humans, by carrying out an enormous number of dissections on a wide variety of animals. Indeed, it was only through inspecting cold-blooded creatures whose blood flows more slowly

24 Keynes (1966); Pagel (1967).

25 Keynes (1966: 431–7).

26 Colombo (1559: 179–81).

27 French (1994), a good exposition of the arguments of Harvey (1628) in the context of contemporary pedagogy.

than in humans that he could confirm by observation what he had surmised by other means, a Galenic procedure. Second, his concern was with two inter-related but separate problems, of which the first, the exact relationship of the movements of the heart and arteries, had long been debated. Vesalius in 1538 had posited a relationship between the contraction of the heart and the flow of blood into the arteries, but at that stage professed agnosticism, although he became more and more convinced of it as time went on. But determining the order of movements within the heart itself was far more difficult, and remained controversial until Harvey's book, whose title also emphasised its descent from Galen's *On Anatomical Procedures*.

From the movements within the heart itself Harvey passed to consider the wider question of the movement of the blood. He was not the first to suggest that blood could flow in certain circumstances between arteries and veins through anastomoses, but in the second part of his book he used a variety of arguments, some with Galenic precedents, to prove that the circulation of the blood from the heart around the body was universal. It is also clear that in rejecting Galen's tripartite system, Harvey was not intending to reject Galenic medicine, something that would have been surprising in so conservative a therapist. Indeed, chapter 16 offers as one of the proofs for the circulation of the blood its power to explain several features of Galenic therapeutic practice and to resolve several disputes among Galenist academics. In particular, it explains why drugs taken externally can pass around the body to have an effect internally. Harvey is thus using Galenic arguments to support Galenic therapeutics while at the same time abandoning one of the central tenets of Galenic physiology.

Harvey's views were not immediately accepted or, when they were, were not always interpreted as he had intended.²⁸ Some of his opponents, such as Jean Riolan (1580–1657) in Paris, raised objections to parts of his demonstration, but by 1660 they were very much in a minority. Others, like the Frenchman Raymond Restaurand (1627–82) or Van der Linden (1609–64) in Leiden, accepted the theory of the circulation while seeking to find ancient precedent for it in the Hippocratic corpus.²⁹ For them, the 'discovery' of the circulation only confirmed the validity of treatments that had been recorded over two millennia.

Galenic therapeutics, so vigorously espoused by Harvey and by most learned doctors throughout this period, had to face one very different challenge. Paracelsianism offered a root-and-branch alternative to the learned therapies of university-trained physicians. Whereas the replacement of classical medical

28 French (1994: 114–285).

29 Restaurand (1657); Van der Linden (1659–64); cf. Sarton (1953).

texts by more modern treatises was largely the result of the accretion of new material, as for example in studies of plague or medical botany, but interpreted within a traditional Hippocratic, Galenic, or Dioscoridean framework, Paracelsianism struck at the very heart of medicine as it had been previously practised. Its initial treatises offered vastly different explanations for health and disease, it appealed to a non-Latinate audience, and its epistemology and ethics involved the rejection of standard institutional structures. Its success at times seemed to threaten the very foundations of society, not least in its linkage with radical evangelical religious ideas.

Paracelsus himself is a very shadowy figure.³⁰ Born in 1493, he may have taken a medical degree in Italy, for he lectured for a time at the University of Basle, where his sponsors included several leading humanists, something unlikely without at least a claim to a degree. But he rejected learned medicine, preferring to write in German rather than academic Latin, and from then on he led a wandering life, rarely staying for more than a year or two in one place. His early publications were a series of almanacs, giving prophecies for the year to come, a typical production of small-town doctors, and at his death in 1541 he was widely known only for a large treatise on surgery, his *Grosse Wundartzney* of 1536.³¹ He would have remained a mere footnote in medical history, had not rumours begun to spread after his death of this great prophet and wonder-working healer who had worked in a sort of exile among the poor in parts of Germany and the Hapsburg world. From the mid-1550s onwards writings under his name began to be published in the German-speaking world, from Antwerp to Silesia, particularly by editors and printers associated with new forms of evangelical religion, such as Perna in Basle.³² Within a decade his ideas had permeated to England, France, and (despite the efforts of the Inquisitions in Bologna, Venice and Rome) even to Italy. By the end of the century they were being taught particularly in Protestant universities, and their adherents had established themselves at many of the courts of Protestant Europe.

The second tradition on which Paracelsus drew, found particularly in the German-speaking world from the Rhineland to Transylvania, was that based on brewing and home remedies. Tracts on distillation were common in medieval manuscripts, and were among the earliest to be printed in northern Europe. Experience with the making of home remedies and with the proto-chemistry involved in mining also suggested a different cosmology than that of Aristotle and Galen. It was a universe of minerals and transmutation, not

30 Pagel (1982); Webster (2008).

31 Sudhoff (1894: 3–39).

32 Hieronymus (1998; 2005).

only constantly changing, but also with very specific properties that could be enhanced by a variety of processes to give a quintessence. It required a knowledge of plants, herbs, and minerals, but also of how they required to be prepared to give their greatest effect. In contrast to the allopathic therapeutics of Galen and his followers, Paracelsus stressed the sympathy between illness and remedy. A disease defined as hot would require a hot remedy that worked because of its affinity with the condition. He also divided his world up into three basic constituents, salt, sulphur, and mercury, each capable of changing the other and whatever was associated with it.

Paracelsus' own experience with mines and mining had shown him the potency of minerals such as lead, copper, and zinc for both good and ill. In the treatise *On Miners' Diseases* (part of which may not be his), he noted the different diseases of those who mined different substances, and in many others he described the value of chemical substances.³³ Unlike traditional pharmacologists, he employed mineral drugs for internal conditions as well as for external ones, paying particular attention to dosage and to the potency of such ambiguous drugs. Herbal remedies he believed derived their efficacy from a specific property that could be isolated by distillation or other processes.

Such ideas ran counter to all that Galenists had believed, from an Aristotelian universe, through anatomy, to humoral therapeutics and a hierarchy of practitioners with the physician at the apex. It is no wonder that learned physicians reacted strongly against them, or regarded titles such as *Paragranum*, *Archidoxis*, or *The Secret of the Philosophers* as close to magic and charlatanry. But there were others, particularly in northern Europe, who saw something useful in them. Conrad Gesner (1516–65), a Zurich physician and editor of Galen, included several Paracelsian mineral remedies in his *The Treasure of Euonymus*, a recipe collection that went through several editions and was translated into many languages, including English.³⁴ Vesalius' teacher, Johann Guinter, wrote at the end of his life a large work designed to show that neither Galenists nor Paracelsians were always correct, but that each had something of therapeutic value to offer the other.³⁵ Even so redoubtable opponent of the Paracelsians as Pieter van Foreest (1522–97), the first professor of medicine at the university of Leiden, took remedies from Philip Hermann (fl. 1553), whose treatises took over, or purported to take over, material from Paracelsus himself.³⁶ Even the London College of Physicians, encouraged by its President, the Huguenot exile

33 Sigerist (1941: 43–126).

34 Gesner (1552; 1559).

35 Guinter (1571), a more theoretical discussion than that of Gesner.

36 Van Foreest (1610: 165–6).

Turquet de Mayerne (1550–1618), included many such chemical remedies in its London Pharmacopoeia of 1618 by what Alan Debus termed the ‘Elizabethan compromise’.³⁷

But it was one thing to extend the use of mineral remedies from largely external to internal use, and another to adopt the vocabulary and cosmology of Paracelsus. Particularly in Basle, Montpellier, Copenhagen, and London there were physicians who wished to find ways of reconciling his theories with more orthodox Galenism.³⁸ Thomas Moffett (1553–1604) for example argued that at times apparently opposed descriptions of drug properties could be taken to apply to the same thing, but from different angles.³⁹ When a Galenist talked of curing a hot disease by applying a coolant, he was referring to the way in which the drug worked; when a Paracelsian applied a hot drug, he was not referring to its effects but to its internal property that stimulated the body to react by cooling down. Both sides also were convinced that true medicine could only be investigated against the wider background of the whole natural world of God’s creation, although there might be varied Protestant and Catholic interpretations of what that divine creation was and meant. The theological ideas of a Robert Fludde were very different from those of a Van Helmont, and still more from those of academic teachers in Basle or Montpellier.

Yet, as Owsei Temkin showed, Galenism survived, at least in part, down to the nineteenth century.⁴⁰ The Leiden professor Johannes A. van der Linden, famous for his championship of the ideas of the ancient Greeks, might complain as he lectured to a near empty hall that students had been enticed away by the innovations of others, but to a modern scholar there is far more to associate the ideas of many of his opponents and of his more celebrated later successor, Herman Boerhaave (1688–1738), with him than to divide them.⁴¹ Fashionable theories followed one after another – iatrochemistry, iatrophysics, iatromechanism, and the like – without destroying the Galenic basis of therapeutics. Indeed, the standard edition of Galen was produced between 1821 and 1832, by the Leipzig professor Karl Gottlob Kühn (1754–1840) precisely in order to make available a major therapeutic resource at a time when all therapies appeared to have drawbacks, none of them rivalling the staying power, and hence apparent effectiveness, of Galen.⁴²

37 Debus (1977: 182–91).

38 Shackelford (2004).

39 Moffett (1584); Debus (1965: 71–6; 1991).

40 Temkin (1973: 179–91), but without investigating the ‘hidden afterlife’ of Galenic ideas in therapeutics.

41 Lindeboom (1968); Knoeff (2002).

42 Nutton (2002: 1–7).

Galenism had an innate flexibility. The sheer size of Galen's own achievement and the writings of his followers allowed for dissent on certain topics, and even, at times, the abandonment of large areas of Galenic thought without necessarily destroying everything. Even Galen, for all his professions of consistency, changed his mind over details, and the Aldine edition of 1525 made clear, almost for the first time, the tension between his empirical tendencies and his desire for a cogent theoretical substructure. Galenism also had an advantage over all its competitors. The language of humoral medicine was familiar to everyone, expressed in works of literature, plays and sermons as well as in manuals of self-help; iatrophysics, and still more Paracelsianism, was scarcely comprehensible except to the expert. Galenism's ubiquity permitted a variety of interpretations that would all qualify under that title. Luis Mercado's reputation as Spain's leading Galenist depended in part on his rejection of Vesalian anatomy, while the Wittenberg professors who eagerly followed the new anatomy would have been surprised to find themselves excluded from the Galenist camp, not least because of their equally strong rejection of both Paracelsianism and Epicureanism.

At the same time, the new Galen revealed by the arrival of the Aldine edition also stimulated scholars to challenge Galen's theories, in part by using his own inconsistencies, in part by following the investigative programmes he had set out. It was a development parallel to the *fortuna* of Dioscorides at the same time, but here it was, in the end, the massive increase in the number of plants from all over the world that relegated the ancient botanist to the margins.⁴³ Galenism still continued to dominate medicine for several decades, particularly in academic medicine, not least because of the sheer amount of Galenic material now available. Flexibility may not be the precise word to describe the reason for its long survival, and one can admit that much of what Galen had taught became increasingly irrelevant over time. But, nonetheless, enough remained still recognisable decades after Vesalius, Paracelsus, and Harvey.

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43 Riddle (1980).

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Galen in an Age of Change (1650–1820)

Maria Pia Donato

It has been argued that tracing the influence of Galen in the Latin West would be like writing the history of medicine in full. This chapter traces some aspects of the reception of Galen in the late seventeenth and eighteenth centuries, a period of significant change. Galenism had been overtly challenged and then dismissed, having been weakened by its own sophistication, disproved by anatomical and physiological research, contested as a bulwark of sterile scholasticism, and made obsolete by new drugs. Yet, Galen's teachings continued to influence modern medicine more subtly than most of his contemporaries would have cared to acknowledge. This afterlife is somewhat elusive, as distinguishing Galen among later stratifications is difficult. Thus, any account can only be selective and circumscribed, raising a number of questions rather than providing answers: What was the fate of Galen and Galenism during the age of mechanical philosophy and chemical medicine? In which areas of medicine were his teachings most resilient? How did his teachings go from learned medicine's best options to polemical passe-partout and subsequently to historical subject matter?

1 A Preliminary Overview: Galen's Afterlife in a Changing Intellectual and Institutional Landscape

Anyone judging the reception of Galen around 1650 to 1820 based on the afterlife of his printed editions and translations would be left with the impression of irreversible decline. Galen's writings were still included in the syllabus of any learned physician and considered must-haves by any library. Older editions continued to circulate, and the classic Aldine edition of the Galenic corpus was prized by physicians and bibliophiles alike. The seventeenth century, however, witnessed an important editorial enterprise intent on providing an alternative edition. In this regard, René Chartier's (1572–1654) thirteen-volume, thematically arranged Greek and Latin *Hippocratis Coi, et Claudii Galeni ... Opera* appeared in Paris in 1639 and was completed in 1679 by François Blondel

and Antoine Le Moine.¹ Still a tentative survey makes Galen's single or collected works and comments published between 1650 and 1820 look desultory in comparison with his Renaissance fortunes (see table 25.1).²

Along with a few practical treatises, *On the Preservation of Health and Art of Medicine* enjoyed somewhat long-lasting success. The former hints at the popularity of literature on hygiene, the latter because of its flexibility in adapting to diverse, even contradictory types of approach. A translation like Nicholas Culpeper's (1616–54) *Galen's Art of Physick* (1652 and reprinted several times) served the polemical intent of popularising learned medicine, whereas the Neapolitan royal physician and professor Luca Tozzi's (1638–1717) *In librum artis medicinalis Galeni paraphrastiké anakephalaiosis* (1710 and reprinted twice) is an instance of academic eclecticism. The only abridgment of *On the Function of the Parts of the Body* was explicitly intended for surgeons and apprentice surgeons.³ *On Treatment by Bloodletting* was often an addition to popular books on surgery and domestic medicine. Commonly, however, only excerpts were included in compendia of ancient and modern authors on surgery. Later, at the turn of the eighteenth and nineteenth centuries, *Exhortation to the Study of the Arts* and *The Best Doctor is Also a Philosopher* found second lives as vindication of formal medical education in a period of reform.

Indeed, Galen's declining fortunes in print are partly explained by developments in medical curricula. Together with Hippocrates and to a lesser extent Avicenna, Galen continued to stand at the core of medical education throughout Europe until the reforms implemented in various countries in the late eighteenth century. Prospective physicians still had to defend theses extracted from these authorities to obtain their degrees and again to be admitted into professional bodies. In particular, *Art of Medicine*, already popular with medieval and early modern classes, remained a relevant and valuable teaching text, probably because its introduction approach allowed for the addition of modern tenets. Nevertheless, the traditional, in-depth comment of ancient texts lost ground to general courses or *institutiones*. Also relevant in this period was the overall improvement in the formal training of surgeons in most European countries.

Hence, reputed physicians published comprehensive textbooks, thus contributing to the decline of Galen in the classroom and in print, notwithstanding that their 'systems' more or less overtly relied on a delicate mix of

1 For a new appraisal of Chartier's work, see Boudon-Millot et al. (2012). I would like to thank Joël Chandelier and Gideon Manning for their insightful comments.

2 On Galen's editions and translations from 1490 to 1540, see Fortuna (Chapter 22) in this volume.

3 Galen, *De l'Usage des parties du corps humain, traduit du grec et latin et mis en bel ordre par questions et réponses pour la facilité des jeunes étudiants en chirurgie*, par A. E. B. D. C. I. (1659).

TABLE 25.1 Editions, translations, and comments of Galen's texts, 1650–1820: Preliminary survey

	1650– 1700	1700– 1820	Reprints	Notes
<i>Caus. Morb.</i>	1			
<i>Purg. Med. Fac.</i>		1		
[<i>Cath. Med. Purg.</i>]	1			
<i>Ars Med.</i>	6	1	8	Includes 6 editions of Nicholas Culpeper, <i>Galen's Art of Physik</i> (1652); a 1660 edition of Sanctorio Santorio's <i>Commentaria in artem medicinalem Galeni</i> (1612)
<i>Opt. Med.</i>		2		
<i>San. Tu.</i>	2	2		
<i>Opt. Doct.</i>		1		
<i>Oss.</i>	1			
<i>Ven. Sect. Er.</i>		1		
<i>Dec.</i>	2			
<i>UP</i>	2	1	1	
<i>Cur. Rat. Ven. Sect.</i>	2	1		
<i>Hipp. Aph.</i>	5	1	5	Includes 4 editions of Niccolò Leonicensio's commentary (1509)
<i>SMT</i>	1	1		
<i>MM</i>	3	2	1	
<i>QAM</i>	1	1		
<i>Hipp. Epid.</i>		1	1	
<i>Protr.</i>		3	2	
<i>Caus. Puls.</i>	1			
<i>Diff. Feb.</i> (with <i>Puls.</i> and [<i>Ur.</i>])	1		3	By Juan Bautista Navarro (originally published 1649)
<i>Tum. Pr. Nat.</i>	1	1		
[<i>Hipp. Hum.</i>]		1		

Note The survey is based on the publication date only, and therefore includes new edition of older writings provided they were reprinted 1650–1820. Data are extracted from the OPACS (online public access catalogues) of Bibliothèque Nationale de France, Wellcome Library, British Library, Biblioteca Nacional de Madrid, Italian collective catalogue ICCU, Katalog der Deutschen Nationalbibliothek, Biblioteca Apostolica Vaticana, Herzog August Bibliothek Wolfenbüttel, National Library of Medicine. Thesis, academic orations, comments on single loci, glossaries and pharmacopeia are not included. For comparison, see Durling (1961).

old and new ideas. Among well-known examples are Herman Boerhaave's *Institutiones medicae* (1708), Georg Stahl's *Theoria medica vera* (1708) plus his opponent Friedrich Hoffmann's *Medicinae rationalis systematicae* (1718), Antoine Deidier's *Institutiones medicinae* (1731), William Cullen's *Institutions of Medicine* (1766), John Gregory's *Elements of the Practice of Physic* (1774), and Philippe Petit-Radel's *Institutions de médecine* (1800). True, libraries and archives are rich in unpublished lectures on Galen that should not be overlooked. Giovan Battista Morgagni (1682–1771), the famous anatomist and proponent of pathological anatomy, began lecturing on Galen, Hippocrates, and Avicenna after his appointment as professor of theoretical medicine in Padua in 1711, but his lectures were only edited in the twentieth century.⁴ Still, there is no comparison with previous centuries, when Argenterius' thousand-page commentary on Galen's *Art of Medicine* barely stood out.

If Galen lost currency in the book trade, Galenists did not. From the mid-seventeenth to the early-eighteenth century, dozens of books and booklets discussed the merits and faults of Galenism with respect to Paracelsian and chemical medicine, recent anatomical discoveries, and experimental natural philosophy or tried to draw a distinction between good and bad Galenists and recover Galen's teachings from any corruption. Of note, one model of such polemics was none other than Galen's *On Sects for Beginners*. Medical sects were weighed against each other, despite eclecticism being the key feature of all of them, with nothing similar to the dominance of medieval and early modern Galenism having subsequently emerged. Indeed, more numerous were the tracts striving to reconcile doctrines 'of Galenists as well as of chemists' and listing medicines as 'chymical-Galenic', 'modern-Galenic', and so forth.⁵ Through this debate, Galenism was further established as a category, inclusive and flexible as it was, overloaded with polemical overtones, especially for those who entered the debate in order to defend Galen's heritage. Furthermore, Galen's name was often associated with popular medicine, such as in recipes books for lay readers. In other words, the rise of new philosophical and medical ideas in learned medicine entailed a social diversification of the print output related to Galen. This eventually contributed to turning Galenism into a synonym for medical traditionalism, 'the symbol of useless therapeutic conservatism, as expensive as it was ineffective, the subject of satire on stage and in literature.'⁶

This transformation was complete by the 1740s. Some authors proposed a return to Galen's true teachings and still strove to demonstrate his compatibility

⁴ Morgagni (1965).

⁵ See for instance Lopez Piñero et al. (1992).

⁶ Nutton (2008: 378).

with modern physiology. Among them was John Barker (1708–48), with his successful *Essay on the Agreement Betwixt Ancient and Modern Physicians or a Comparison Between the Practice of Hippocrates, Galen, Sydenham and Boerhaave in Acute Diseases* (1747), but Galenism as a self-supported medical philosophy was dead.

In contrast, Hippocratism was reinvented as non-dogmatic, methodologically aware observational medicine, which stood opposed to both conservative Galenism and excessively philosophising medicine. Contrary to Galen's works, those of Hippocrates did not cease to be printed or commented on.⁷ Although Galen continued to influence semiology, hygiene, therapeutics, and ethics, Hippocrates replaced him as the main authoritative reference. It did not really count that Hippocrates was still largely seen through Galen's eyes, his less systematic teachings could be more easily adapted to modern ideas. Hippocrates came to embody the perfect observer physician, whereas Galen only served as a model of bedside insight. As Vivian Nutton has pointed out,⁸ Karl Gottlob Kühn's monumental edition of the Galenic corpus (1821–33) adopted a practical, not a philological scope, and was precisely meant to revive Galen as a source of practical guidance in the difficult task of curing the sick.

2 Major Revisions of Galen in the Seventeenth Century

In the early modern period, criticisms of Galen were rooted primarily in Paracelsianism, Aristotelianism, and Vesalian and post-Vesalian anatomy.⁹ Of the opponents of Galen, only Paracelsus aimed at overturning Galenic medicine altogether. Rather, its collapse resulted from the accumulation of knowledge from physiological and anatomical research, starting with William Harvey's (1578–1657) *De motu cordis* (1628), and, last but not least, a general shift in the ideology of scientific progress.

Much has been written on Harvey's Aristotelianism and on how he wanted to reconcile it with Galenic anatomical procedures.¹⁰ Nonetheless, his demonstration inflicted a forceful blow to Galen's physiology. By the mid seventeenth century, challenges to Galen were voiced outspokenly, at a time when Aristotle's philosophy was also being invalidated. Although the two authors could occasionally be turned against each other and against scholasticism in

⁷ Blas Bruni Celli (1984), and more generally Cantor (2002).

⁸ Nutton (2002).

⁹ Siraisi (1997); Wear (1981); Wear et al. (1985); Cunnigham (1997).

¹⁰ Pagel (1967); French (1994); Ongaro et al. (2006).

general, the sense of novelty and feeling of progress that Renaissance anatomists and physicians associated with the rediscovery of Galen largely turned into its opposite.¹¹ Regardless of their actual indebtedness to Galen, the *Ortus medicinae* of Jan Baptist van Helmont (1580–1644) and the *Principia Philosophiae*, and especially *De l'homme*, of René Descartes (1596–1650, who was not a physician, but enormously influential) can be deemed watersheds in this changing attitude towards ancient authorities, inspiring generations of physicians to revise conceptions of the body in chemical and mechanical terms.¹²

However inconsistent with one another, and themselves being indebted to Galen and to scholastic philosophy at large, proponents of both trends contributed to undermining Galenism by combining anatomical findings with non-Aristotelian physics and new explanations for the causes of disease. Those favouring some strand of mechanical philosophy were possibly more eager to prove that 'animal economy' depended on matter and motion only, but the traditional distinction between iatromechanists and iatrochemists is inadequate for describing the circulation of ideas, let alone the fact that no one was really ready to renounce the idea of some kind of human exceptionalism.¹³ Corpuscular matter theories, for instance, bridged the gap between the two approaches. Even staunch mechanists like Giovanni Alfonso Borelli (1608–79, also not a physician, but highly influential), Lorenzo Bellini (1643–1703), and Marcello Malpighi (1628–92) combined the two, for instance, through the idea put forward by Frans de la Boë (1614–72) and Thomas Willis (1621–75, himself an admirer of Descartes) of blood fermentation and chemical imbalance.¹⁴ The inherent property of the fibre to react stimuli that Francis Glisson (1599–1677) postulated in his Aristotelian response to Cartesians was reformulated by mechanists in their effort to explain involuntary movements.¹⁵

So far as one acknowledges that the attack on tradition was partly ideological, it could be argued that Galen influenced late seventeenth-century medicine by providing the canvas for the investigations meant to disprove him. Research on the brain is a case in point. As Julius Rocca has pointed out,¹⁶

11 Wear (1981).

12 The indebtedness to Galen and, more generally, Aristotelianism has been the object of very contrasting appraisals, such as Lindeboom (1979); Bitbol-Hespères (1990); Verbeek (1993); Manning (2012).

13 Chandelier and Robert (2013). On the varieties of mechanism, see Bertoloni Meli (1997); Caps (2010); Roux (2013).

14 Bynum and Nutton (1981); Clericuzio (2000).

15 French (1994: 287–309); Giglioni (1996); Ishikuza (2012).

16 Rocca (2003).

Galen's anatomy of the brain was a most remarkable achievement, given the importance he attached to the organ in his physiology and anthropology. At the beginning of the seventeenth century, knowledge of the brain was still roughly based on the gross anatomy described by Galen and Renaissance anatomists: Andreas Vesalius (1526–64), who doubted the existence of the *rete mirabile* but not Galen's general view of the brain and nervous system, along with Costanzo Varolio, Giulio Casserio, Adrianus Spigelius. Of particular interest were the ventricles, where Galen had placed the distillation of animal spirits (although there was debate as to how the process worked and their precise consistency) and where, contrary to Galen himself, medieval and Renaissance authors had situated most cerebral functions. One should keep in mind that speculation about mental operations traditionally fell within philosophy, not medicine, and revolved around Aristotle's *On the Soul*. By mid-century, most established notions had come under scrutiny, and brain anatomy became what the Danish anatomist Niels Stensen (1638–86) called the 'most renowned anatomical problem of the century'.¹⁷

Placing as much importance on the brain as Galen had, new theories basically displaced the distillation of animal spirits – now understood as a material substance, albeit a 'most subtle' one – from the ventricles to the cortex. The cortex underwent micro-anatomical research based on the assumption that neural circulation was analogous to the circulation of the blood.¹⁸ This post-Harveyan neurology produced a number of milestones: Johann J. Wepfer, *Observationes anatomicae ex cadaveribus eorum, quos sustulit apoplexia* (1658), offered a more precise description of the cerebral arteries; Frans de la Boë (Sylvius), *Disputationum medicarum* (1660), moved the production of animal spirits from the ventricles to the cortex; Niels Stensen, *Observationes anatomicae* (1662), demonstrated that tears are secreted by specific glands, striking a deadly blow to the ancient notion of cerebral excretion that had already been disputed by Konrad V. Schneider, *De osse cribiforme* (1655); Thomas Willis, *De cerebri anatome* (1664), distinguished the voluntary and involuntary nervous systems and put forward a scheme of the brain's functional localisation; Marcello Malpighi, *De cerebro* (1665), resorted to the micro-anatomy of the grey and white matter to claim that the brain functioned as a gland, like other organs. Meanwhile, Willis, Borelli, Stensen, William Croone (1633–78), and others strove to revise muscular motion.¹⁹

17 Stensen (1669: 4).

18 Clarke (1978). Cartesians anatomists, namely Regius, were among the most resolute proponents of the blood/nervous fluid analogy in circulation.

19 Bastholm (1950); Clarke and O'Malley (1968).

As a result of the above developments, new ideas about cerebral pathologies emerged as well. Apoplexy, for instance, was considered by Galen to be a cold disease of the brain, in most cases caused by phlegm, but sometimes by blood or black bile, that is, things that obstruct the flow of animal spirit because of a local *kakochymia* and plethora in the ventricles.²⁰ Late seventeenth-century physicians, however, insisted on haemorrhages (Wepfer and Giovanni M. Lancisi), defective neural circulation (Carlo Fracassati and Bellini), and diseased meninges (Willis and Antonio Pacchioni).²¹ The new brain and neural anatomy provided further inspiration for revising such pathologies as epilepsy, catalepsy, and other mental conditions.²²

With the very successful *De cerebri anatome*, Willis emerged as an influential proponent of the naturalisation of mental illness. This 'somatisation' can actually be considered faithful to the spirit, if not to the letter, of Galen, who considered the soul to be deeply subject to temperament; although he never gave a clear statement on the nature of the soul and its connection to the body, he was nevertheless often alleged to be a materialist by the most pious philosophers and physicians, both Catholic and Protestant.²³

Likewise, new ideas were put forward on the kidneys, lungs, intestines, liver, and gallbladder in regard to their structure and functions and, to a lesser yet significant degree, their ailments. As Galen's was an all-embracing system, revision in one area elicited research in others. Thus, even when disproving Galen was a driving motive, in more than one respect, he still provided the blueprint of any general medical approach to Man and Nature. As comprehensive and philosophically syncretic as his monumental work was, it could be bent to readings incongruous with his questions. Thus, although *On the Natural Capacities* was probably the most contested (and even ridiculed) of his teachings, it was possible to read it as a somatisation of bodily functions by comparison with Aristotle and especially scholastic philosophy. Some scholars have even spoken of Galen's 'machinism'.²⁴ Although Galen's vision of the body was inherently holistic, he also taught how to separate the parts and their functions. Furthermore, in Galen as in Greek anatomy at large, form was related to function, which still held in mechanical medicine, although teleology was downplayed or blurred in a vague natural theology, itself not dissimilar from

20 Karenberg (1994).

21 Donato (2014).

22 Temkin (1945); Rousseau (1990); Withaker et al. (2007).

23 Manuli and Vegetti (1988); especially Garcia Ballester (1988); Wright and Potter (2000).

24 Pichot (1993: 151–68), but see Berryman (2002) for discussion of terminology.

Galen's own one.²⁵ Finally, although his pathology was humoral and qualitative, he also pointed at the importance of locating the source of disease.

Clearly, not all seventeenth-century authors shared the same theoretical awareness. Furthermore, those who were physicians by education and profession were generally not as familiar with Aristotle (and scholastic philosophy) as with Galen. One man pursuing the program of proving Galen's view of man and nature just as untenable as Aristotle's was Malpighi, the Italian anatomist, physician, and natural philosopher. In his posthumous autobiography, Malpighi recalled that he had been a young student 'all devoted to Galenism' and that he converted to the 'free and Democritean philosophy' under the influence of Borelli in Pisa.²⁶ Henceforth, although he considered the ultimate nature of the physical world out of human grasp, he followed a research agenda in the wake of Galileo, Descartes, and Gassendi, though hardly mentioning them.²⁷

In Malpighi's *Opera Omnia* (1686), Galen only appears some fifteen times in a web of citations from ancient and modern authors alike. Yet, the elimination of the natural faculties was the main objective of Malpighi's microstructural investigations. 'So long as we are ignorant of the true essence of the cause which is operating, we call it a faculty', he wrote in 1678, referring to Galen's *On the Natural Capacities* and its later misinterpretations.²⁸ *De pulmonibus* (1661) was Malpighi's first attack on Galen's physiology. Instead of parenchyma harbouring the faculties, lungs were an 'aggregation of extremely thin membranes' that did not attract air, but rather mechanically improved circulation through anastomosis (which established beyond doubt Harvey's view of the blood's circulation). Blood itself consisted of tiny globules (*De polypo cordis*, 1666), and its components separated while circulating through the various organs, thus getting rid of Galenic faculties. The gland was the unifying structure that solved the puzzle of other viscera, and Malpighi granted the kidneys, spleen, and cerebral cortex a glandulous structure and a mechanical function. With *De viscerum structura* (1666), 'the mechanical reconstruction of the "animal economy" was essentially completed ... The lungs "knead" the blood, thereby keeping its components well-mixed and freely flowing. All the other viscera, because of their peculiar structure, then filter-off suitable fractions of the particles coming to it'.²⁹ Meanwhile, corpuscularianism enabled Malpighi

25 On the persistence of teleology, see Manning (2013).

26 Malpighi (1686: 6).

27 On Malpighi, see Brown (1968); Adelman (1975); Bertoloni Meli (1977; 2011).

28 Quoted in Adelman (1975: 11.775).

29 Brown (1968: 103).

to relinquish Aristotelian qualities in his studies on the sensory organs (*De lingua* and *De externo tactus organo*, 1665).

Obviously, such a vision raised resistance, which brought to light the methodological issues related to the rejection of the Galenic heritage that had grown so complex and multifold over the centuries. In Galen's name, opponents contested the reduction of function to structure, the usefulness of microscopy and comparative anatomy for practical medicine, the priority of theory over experience in therapeutics. The last criticisms also came from anti-Galenists such as Thomas Sydenham (1624–89). At the same time, however, Galen's authority could be turned against empiricists appealing to his dislike of the ancient empirical school. In *Response to the Criticisms from the Galenists*, which enjoyed wide circulation as a theoretical manifesto and a polemical tract, Malpighi refers to Galen as a skilled anatomist and zootomist and proclaims the soundness of a rational approach to the healthy and diseased operations of the body.³⁰

By distinguishing Galen from Galenism, Malpighi resorted to a powerful argument that resounded for decades. Admittedly, however, empiricists drew on the real difficulty that the 'neoterics' encountered in innovating healing methods. Malpighi was himself a reputed practitioner; his preference for simple and 'sweetening' medicines appears to reflect his tenets in physiology, but nevertheless rested on a traditional pharmacopeia.³¹ This point raises a further issue – the resilience of Galenism in medical practice.

3 Medical Practice, Therapeutics, and Hygiene during the Enlightenment

Owsei Temkin has written that the extinction of Galenism 'was not a sudden event but a process in which very dramatic episodes interchanged with inconspicuous, though not less important, developments'.³² Galenism did not really survive as a science past the middle of the seventeenth century, but it did survive as a guide to medical practice in spite of the new philosophy. How long did it survive and how?

In the late seventeenth and early eighteenth centuries, although humoralism still provided a largely shared understanding of the pathological functioning of the human body, the rising use of dissection shifted the emphasis from

³⁰ Malpighi (1698: 161–257); Cavazza (1997).

³¹ Bertoloni Meli (2011).

³² Temkin (1973: 135–6).

the fluids to the organs or ‘solid’ parts of the body, which, in turn, justified the use of dissection in investigating disease. Eighteenth-century morbid anatomy as encapsulated by Giovan Battista Morgagni’s *De sedibus et causis morborum per anatomen indagatis* (1761) further relinquished Galen’s pathology. Later in the century, vitalism moved away from the somehow schematic conception of disease held in mechanical medicine, but although the vitalists’ view of the human body as a living, purposeful organism was arguably closer to Galen’s, it did not imply the recovery of his pathology.

What about Galen’s healing method, then? Only recently has the social and cultural history of medicine turned to healing practices in an attempt to grasp views from the past towards health and sickness. There is now consensus that continuity dominated in this area, notwithstanding the introduction of new drugs (e.g. Peruvian bark and guaiacum for the cure of tertiary fevers and the French pox) and new explanations of the ‘qualities’ of medicinal substances. Surgical remedies such as bloodletting could even be better explained in a mechanical framework. It should nevertheless be remembered that as with Malpighi, a tendency to medicinal simplification (at least in writing) emerged in the eighteenth century and was often accompanied by accusations that the Galenists overmedicated.

Some scholars further underscored the resilience of humoral notions like, for instance, putrid matter.³³ Galen’s ideas on temperaments enjoyed a long afterlife too, well beyond the eighteenth century.³⁴ As noted, the view that Galen could still provide insight into the difficult art of curing was a recurring one. Once the battle of the ancients and moderns ended, a quieter appraisal of Galen’s clinical skills again found a foothold. The most important was certainly Kühn’s, whose edition reflected the eclecticism of German academic medicine culture and ‘an approach that looked back to history in seeking to pick out the most effective theories and practices from the past as a guide to the present’.³⁵ A similar practical goal informed Charles Daremberg’s French translation of Galen’s work from 1854 to 1856.³⁶ Nonetheless, the *longue durée* of Galenism should not be emphasised without taking into account that the transfer of old concepts into new configurations of knowledge was unstable and further diluted Galen’s heritage.

Hygiene proves a good vantage point on such complexities. As said, *On the Preservation of Health* outlived Galenism. In the 1720s, Hermann Boerhave, for

33 Wear (2000).

34 Temkin (1973: 178–81); for a culturally oriented standpoint, see Rousseau (2007).

35 Nutton (2002: 7).

36 Temkin (1973: 188–91).

all his anti-Galenism, considered it the best work ever written on hygiene, as did the Swiss physician and medical reformer Samuel Auguste Tissot in 1785.³⁷ The doctrine of the six non-naturals was in truth a most enduring one. Codified in the Middle Ages, it had grown into a sophisticated, plastic doctrine during the Renaissance, enabling physicians to address both the treatment of disease and the preservation of health. A whole body of preventive medicine developed on the regimens of health, which adapted the non-naturals doctrine to suit individual needs and changing urban lifestyle.³⁸

At the end of the seventeenth century, mechanical philosophy on the one hand and medicinal consumerism on the other entailed a decline of *regimina sanitatis*. This does not mean that recourse to the non-naturals ceased entirely. Countless books in the late seventeenth and eighteenth centuries addressed the correct use of the six non-naturals as part of the treatment or the prevention of ailments, and in spite of some dissenting voices, hygiene was still considered to be a proper branch of medicine. Nonetheless, the understanding of the non-naturals changed. Emphasis was put mainly on air and eating and drinking as sources of noxious corpuscles that entered the body and acted on bodily fluids and tissues (themselves corpuscular in nature) through their chemical or physical properties, whereas the canonical non-naturals were actions and principles of qualitative balance in the *krasis* of humours. Neither was entirely new, but these non-natural things were singled out from the non-naturals complex that worked holistically in the Galenic tradition. While giving what Jeremiah Wainewright termed a 'mechanical account' of the non-naturals to fit into modern natural philosophy, authors like Wainewright himself, Bernardino Ramazzini (1633–1713), John Arbuthnot (1667–1735), up to Félix Vicq d'Azyr (1746–94), the founder of the Royal Society of Medicine in Enlightenment France, made a special plea for the impact of air on the body, either as vector of noxious particles or in the form of climatic conditions.³⁹ In this field too, then, Galen lost ground to Hippocrates as a source of inspiration in investigating the connections between environment, lifestyle, and illness, and, equally important, in pleading for an active medical policing of public health regardless of the 'complexion' of each individual.⁴⁰

During the course of the eighteenth century, some authors revived the somewhat failing genre of health advice, either out of religious inspiration and philanthropy or professing the Enlightenment credo in Nature. Works

37 Boerhaave (1726: 406); Tissot (1785: 63).

38 Mikkeli (1999); Cavallo and Storey (2013).

39 Wainewright (1707); Ramazzini (1714); Donato (2017).

40 Riley (1987); Cantor (2002).

such as George Cheyne's *Essay on Health and Long Life* (1725), Antonio Cocchi's *Del vitto pittagorico* (1743), James Mackenzie's *History of Health and the Art of Preserving it* (1758), Tissot's *Avis au Peuple sur sa santé* (1768) enjoyed wide success in recommending temperance, frugal or entirely vegetarian food, and open air activity.⁴¹ Although they proclaimed their allegiance to modern physiology and emended the content of the non-naturals – especially in endorsing 'cold regimens', which can be seen as an effect of Galen's innate heat losing currency in circulatory physiology – these authors acknowledged Galen's authority and resorted to Galenic-humoral notions like temperaments.⁴²

Emphasis on social circumstances in respect to the use of non-naturals bridged Galenic tradition and Hippocratic environmentalism. From the late eighteenth century onwards, hygiene was usually divided into private and public, the latter relating to the 'general health and safety of a great community'.⁴³ Altogether, both 'private' and 'public' hygiene featured an ambition to apply the same rules of healthy living to a larger population.⁴⁴ Thus, Galen's non-naturals may still have been part of the medical discourse, but this more collective stance on health eventually led to relinquishing the original Hippocratic concept of idiosyncrasy and the Galenic and scholastic notion of individual complexion, in which the doctrine of the non-naturals was embedded.

4 Medical Ethics in Galen's Shadow

One area in which the subtle influence of Galen remained strong throughout the eighteenth century and beyond was medical ethics. Although Galen ceased to be even mentioned, and Hippocrates became the dominant authoritative reference, it was still Hippocrates as seen through the eyes of Galen. As the social conditions of medical practice changed within the broader social and political transformations of modern Europe, especially in Britain, Galen's teaching still continued to inspire professional ethics both with regards to the image of the good practitioner and his attitude towards his patients.

41 Emch-Déraz (1992); Guerrini (1996).

42 See, for instance, Mackenzie (1758: 367), who however introduces several specifications with regard to social circumstances.

43 Sinclair (1807). Already the entry *Hygiène* by Arnulfe d'Aumont for Diderot and d'Alembert's *Encyclopédie* posits such distinction, as does later in the eighteenth century the *Encyclopédie méthodique*, entry by Noël Hallé.

44 Wear (1993).

Since the early seventeenth century, against the backdrop of the battle between the ancients and the moderns, Galen's ideal of a learned, methodologically conscious physician, trained in philosophy and anatomy and aware of contemporary debates, served as a model, including for those who criticised Galenism. *The Best Doctor is also a Philosopher* was a Trojan Horse for adjusting the canon of medical education. Just as Galen and his medieval and Renaissance interpreters had insisted on logic, medical reformers now insisted on mathematics in the wake of Galileo and Descartes, on experimental physics, chemistry, and, of course, the practice of dissection.⁴⁵ Academic orations were the perfect occasion for recommending innovation in the name of Galen himself. Most medical writers also preached to never relinquish the ancient masters – Hippocrates, Galen, and Celsus – amidst contemporary authors, as did those by Friedrich Hoffmann (1660–1744), Giovanni M. Lancisi (1654–1720), and Morgagni.⁴⁶ Even those who contested Galen, like Boerhaave (1668–1738), resorted to this same scheme and eventually conceded his merits.⁴⁷

Galen's influence was more emphatic with regards to professional ethics. The professional who acts with candour and honour and has the ingenious and liberal manners of a gentleman closely resembles the disinterested, truth-searching, and considerate Galen. Of course, rules of conduct and moral norms were found in the Hippocratic *Oath* and *Law*, and the later and more professionally oriented *Decorum* and *Precepts*, so eighteenth-century authors referred to the Sage of Cos without even mentioning his commentator Galen when recommending sobriety, modesty, and solicitude. It mattered relatively little that the standard of decorum changed from a severe, nearly clerical academic into a more genteel, sociable practitioner with the rise of a secularised society.

Over the centuries, Galen had provided more practical guidance in dealing with the sick and his or her family with his goal-oriented ethics and emphasis on experience; he continued to do so in spite of his concealment. He had warned doctors about pusillanimous and volatile patients as well as their untrustworthy relatives; he had taught how to adapt any treatment and word to the sufferer's temperament, habits, and social circumstances. His teachings informed medical professional literature well into the eighteenth century and

45 Cornelio (1663).

46 Lancisi (1715); Hoffmann (1746); Morgagni (1765).

47 Boerhaave (1726); Kegel-Brinkgreve and Luyendijk-Elshout (1983: 54–84).

later, whether authors acknowledge their source, as Hoffmann did, or not, as John Gregory (1753–1821) and Thomas Percival (1740–1804) did a century later.⁴⁸

Galen's long shadow casts itself over the most sensitive issues of medical ethics. Take for instance prognosis, especially predicting death. After the fourth Lateran Council (1215), it became the duty of any Christian physician to reveal a negative prognosis and let the sick prepare for his or her transit. Like Hippocrates, Galen and his commentators had never questioned the physician's obligation to disclose prognoses as quickly as possible to avoid false hope and expectations (which, moreover, could harm the physician's reputation). Indeed, as Jacques Jouanna has remarked,⁴⁹ Galen added a moral stance to Hippocrates' notion of prognostic caution, that is, the focus shifted from avoiding wrong prognostics to not lying. In the *Commentary on Hippocrates' 'Epidemics VI'*, however, Galen had introduced reasons for delay, asserting that the physician has to be fully aware of the patient's personality before disclosing truth. Galen's instructions enjoyed great popularity with medieval and early modern deontology, in spite of religious injunctions. During the heyday of the Reformation and Counter-Reformation, some denounced Galen's faulty doctrines, but the majority of writers followed his lead.⁵⁰

In the eighteenth century, the doctor's role became that of a trusted friend to his patient. Medical ethics lost the somewhat cynical vein of previous times, yet Galen's prudence still underpinned it. According to Percival, a physician 'should not be forward to make gloomy prognostications'; although 'he should not fail, on proper occasions, to give to the friends of the patients, timely notice of danger, when it really occurs, and even to the patient himself, if absolutely necessary', he argues, bad news can be fatal so always disclose truth 'with delicacy' and to family first.⁵¹ Gregory went further stating, 'A physician is often at a loss in speaking to his patient of their real situation, when it is necessary. A deviation from truth is sometimes, in this case, both justifiable and necessary'. He further said, 'It behoves a physician never to conceal the real situation of the patient from his relations', while he can give intimations to the patient if requested with insistence, that is, a paraphrase of Galen's advice.⁵² In 1820 in Catholic Italy, Luigi Angeli (1739–1829) insisted on the religious obligation to straightforwardness in a chapter on the 'duties of physicians towards God', but when it came to the 'duties towards the patient', he advocated

48 Hoffmann (1738); Percival (1803); Gregory (1805).

49 Jouanna (1997).

50 Donato (2014: 143–66).

51 Percival (1803: 31). For an outline of the evolution of medical ethics see Wear et al. (1993); Baker et al. (1993).

52 Gregory (1805: 32).

traditional Galenic common sense.⁵³ This continued to frame medical ethics in the early twentieth century, if not to the present day.

5 Conclusion: from Medicine to Medical History?

Rosalyn Rey has argued that the eighteenth century saw the invention of Hippocratism but also the discovery of Hippocrates as a historical subject.⁵⁴ Was the same true of Galen?

Historically framed arguments had been crucial in medical controversy since antiquity, and Galen had not refrained from using them in his polemical tracts. Such discussions were an essential part of pro- and anti-Galenism polemics in the seventeenth century. Towards the end of the century, a more scholarly appraisal of the history of medicine emerged, although still embedded in debates on the practice of medicine.

Daniel Le Clerc's *Histoire de la médecine* (1699) reflects such a new historicising stance, but still expatiates on Galen's pathology and semiology. Le Clerc initiated a tradition of depicting Galen as a dogmatic author in opposition to Hippocrates that would find great currency in the following decades. John Freind's *History of Physick, from the Time of Galen* (1725), translated into several languages, was also written 'chiefly with regard to practice'.

Later in the century, the history of medicine blossomed into a branch of the *histoire philosophique* for the advancements of mankind. Enlightenment culture and transformations in medicine fostered an approach to past doctrines not as a clash between ancients and moderns, but as (uneven) progress.⁵⁵ In such a framework, Galen stood out as a heroic figure, second only to Hippocrates, whose teaching he interpreted, systemised, and established on a sound anatomical basis. A 'brilliant mind', as Rosario Scuderi (1767–1806) portrayed him,⁵⁶ according to Kurt Sprengel (1766–1833), Galen triumphed over medical sects and brought medicine back to the path of Nature and Truth, but then fell victim to his frenzy for systematisation.⁵⁷ Galen was indeed a 'genius so great as to embrace all sciences', who implemented Hippocrates' observations with all available knowledge into a proper system, as Pierre Jean Georges Cabanis (1757–1808) wrote. His system then, complicated and corrupted by the

53 Angeli (1820).

54 Rey (1992).

55 Lammel (2005).

56 Scuderi (1800).

57 Sprengel (1792–9).

‘subtle intellect’ of the Arabs, reigned ‘tyrannically’ for centuries.⁵⁸ Yet, for this Enlightenment physician and revolutionary politician, the ‘real pathology is mostly to be found in the writings of the Ancients’, who left the ‘most accurate depictions of diseases’ and rules for treatment ‘drawn from the very bosom of Nature’. Hence, although Cabanis acknowledged that in his time, ‘no enlightened man would dare declare himself a sectator of Galen’, he still recommended *Therapeutic Method*, full of ‘wisdom and eternal truth’.⁵⁹

By the early nineteenth century, Galen was ready to go down in history, but had not quite done so. Arguably, Kühn’s and later Daremberg’s attempts to revive his teachings on practical grounds eventually facilitated such a passage by making Galen’s work available for a different kind of scholarship.

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58 Cabanis (1804: 112–14, 240).

59 Cabanis (1804: 241, 350).

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Galen into the Modern World: from Kühn to the *Corpus Medicorum Graecorum*

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Summarising in a few lines fifteen centuries of Galenism, at the very close of the eighteenth century the ‘father of medical historiography’, Kurt Sprengel (1766–1833) could remark that ‘if the veneration in which the barbarians of the Dark Ages held Galen was absurd, the contempt with which many physicians of this century of the Enlightenment regard this colossus brings shame on themselves.’¹

Truly, the Age of Enlightenment had not been kind to Galen. With medicine undergoing dramatic transformations in its theoretical and philosophical foundations, with vitalism challenging mechanicism, Brunonianism dialoguing with *Naturphilosophie*, historicism confronting Kantian critical philosophy, there was little justification why the learned doctor, the traditional keeper of Galenic medical wisdom, should find any reasons to devote himself to the study of a subject that was getting more and more out of touch with the reality of medical profession.² Therefore it may seem incongruous that, in the midst of the spiritual ferment of the *Goethezeit*, of the political and social unrest of the French Revolution and the Napoleonic Wars, the early nineteenth century also prepared the ground for Galen’s survival in the next hundred years.

Still, one should remember that the physician or the man of learning who, at the turn of the century, wanted to read Galen, could only rely on a handful of recent Greek editions, while the old unserviceable Basileensis and Chartier were still the standard complete editions with Latin translations.³ Kühn seemed to offer a fresh start in the form of an exhaustive, affordable Galen edition,⁴ and nobody would deny that it has performed this task admirably well, a proof being that still today nearly thirty Galen-attributed texts are available only in his edition. However, the tide was turning already at the time of its going to

1 Sprengel (1792: 91). All English translations are mine.

2 Two modern works devoted to the history of Galenism, Temkin (1973) and Cosmacini and Menghi (2012), place the end of active medical engagement with Galen around the end of the eighteenth century.

3 Basileensis (1538); Chartier (1638–89).

4 See Beck (1821: 221): ‘This compact edition of Galen can be highly recommended for its elegant and clean Greek and Latin text’.

press. Medicine was developing into an experimental exact science, while doctors had a set of strictly regulated professional qualifications imposed on them; medical history was coming into being as an autonomous discipline, with philology slowly metamorphosing from antiquarianism to science of antiquity.

In this evolving scenario, the classically educated doctor envisaged as Kühn's readership was disappearing, and we can now wonder whether the new editorial enterprise announced the end of an era rather than the start of a new one. This chapter will follow Galen's migration from the dominion of learned doctors to that of professional philologists. The complete Galen edition (Leipzig 1821–33) by Kühn marks a cornerstone of Galenism. This is the edition from which generations of scholars have studied Galen, and this is the edition, like Stephanus' Plato and Bekker's Aristotle, still used in referring to Galenic passages. The bulky mass of its twenty-two tomes still is a familiar presence on the shelves of classical and medical libraries. However, because of its only too evident shortcomings, a harsh assessment of Kühn has been commonplace among scholars, and only recently an article by Vivian Nutton has expressed a kinder judgement by evaluating Kühn's work in the context of the medical world of his times rather than through the lens of the modern philologist.⁵

To begin with, we should remember that, in spite of his remarkable proficiency in Latin and Greek, Karl Gottlob Kühn (1754–1840) would certainly not have called himself a philologist. Not even a historian – although perhaps, as Sprengel thought of himself, a *Geschichtsforscher* rather than a *Geschichtsschreiber*.⁶ A doctor by training and by profession, and a prominent member of the Leipzig academic establishment, Kühn learnt Latin and Greek at school and then as a student of medicine and classical languages at Leipzig,⁷ where linguistic competence was still the first requirement for a future physician and theoretically oriented lectures on the classics constituted the basis of teaching.⁸ After completion of the doctorate in medicine, the doors opened for him at Leipzig University, with an appointment as *extraordinarius* followed by

5 Nutton (2002). Kühn's edition was famously dismissed as *une entreprise purement mercantile* ('a purely commercial enterprise') by Daremberg (1851: xxvii). Similar remarks in e.g. Marquardt (1884: v), and more recently Jouanna and Boudon-Millot (1993: 103): *son édition ... a pour seul mérite celui d'exister* ('the only merit of his edition is that of existing').

6 See Sprengel as quoted by Lammel (2004: 42).

7 For Kühn's biography see Kümmel (1982), together with the remarks by Nutton (2002:). An exhaustive list of his writings in Callisen et al. (1830: x.431–42; 1841: xxix.373–80).

8 See Döring (2009: 710). On the development of medical teaching and research at Leipzig, see Riha (2009). In spite of the substantial reforms of 1830, many old habits were kept, and it was only in 1857 that the requirement of Latin for the doctoral dissertation, since long perceived as no more than a nuisance, was dropped; see Riha (2009: 963). In Leipzig too, knowledge of the classics was losing its position of pre-eminence in the new, scientifically grounded and specialised medicine of the nineteenth century.

a full professorship with chairs in anatomy and surgery and then physiology and pathology. Second and then first professor of the faculty, Kühn also sat as university dean.

A heavyweight presence in Leipzig's academic life, Kühn does not seem to have been hindered in his scholarly research by his institutional commitments, and among his medical contributions we should mention at least the works on the therapeutic use of electricity, smallpox inoculation, obstetrics, and food poisoning.⁹ He also edited scientific and literary reviews as well as translating the works of recent (Hunter, Beddoes, Bell) and less recent (Sydenham, Baglivi) physicians. His main interests, however, lay in the history of medicine, and if today the name of Kühn is almost exclusively remembered for Galen, this is only one detail of the whole picture. His countless philological essays on a range of authors show factual erudition, attention to detail and linguistic sensitivity.¹⁰ His *Bibliotheca medica* gives a clear idea of his comprehensive, bibliographic and inventory-centred approach to the history of medicine.¹¹ And in the ambitious project of publishing all the ancient Greek medical writings,¹² Galen (vols 1–20) was going to be accompanied by Hippocrates (21–3), Aretaeus (24) and Dioscorides (25–6, edited by Sprengel).¹³

Kühn's original intention was simply to reprint Chartier's Galen with emendations from the Paris manuscripts and improved Latin translations.¹⁴ But Chartier was encumbered with lacunae and errors and, being aware of the

9 As samples of a relentless production spanning nearly six decades, see Kühn (1783; 1785) and the essays collected in Kühn (1827; 1828b).

10 Most of Kühn's minor works published since 1798 are collected in Kühn (1827; 1828a).

11 Kühn (1794).

12 Kühn's *Medicorum Graecorum Opera quae Extant* was not alone. A *Bibliotheca Iatrica* (including the universal medical literature from Hippocrates to Brown!) had been planned by J. F. Pierer, and a *Bibliotheca Graeca Medica*, some years later, by C. W. Fickel. J. F. C. Hecker envisioned a new Latin Galen, while G. J. F. Nöldecke had already translated *On the Function of the Parts of the Body* as the first volume of a German Galen; see Pierer (1806); Fickel (1833); Nöldecke (1805). For Hecker's proposal, see Ackermann in Kühn (1821: I.cclxiv). For a caustic review of Pierer's project (as well as of the correctness of his Latin), see N. A. A. (1810).

13 Kühn (1821–33; 1825–7; 1828); Sprengel (1829). An autograph letter shedding some light on the genesis of the series has been published by Mavroudis (2003). The series was going to be published by the firm of Karl Knobloch, established in Leipzig in 1810 and therefore relatively new; see Knobloch (1910). The complete Galen series was going to cost 182 talers, the equivalent of a dictionary per single volume; see Knobloch (1910: 14). The plan aimed at continuing with Paul of Aegina (K. Sprengel) and Aetios of Amida (C. Weigel), while the critical edition being prepared by Dietz made the publication of Oribasios superfluous; see Kühn (1830: xix.vi–vii).

14 Kühn's methodological principles are expounded in the preface to the series; see Kühn (1821: I.vii–xvi).

unfeasibility of a thorough revision of the manuscripts and sixteenth-century editions, Kühn carried out what he could (*feci quod potui*), namely the collation of the Basileensis and Chartier with the available manuscript and printed texts. Three glossed Aldinae proved valuable: one from Dresden, a second from Wolfenbüttel annotated by Giuseppe Scaligero (1540–1609), and a third from Jena annotated by Janus Cornarius (c. 1500–58).¹⁵ Many of Kühn's innovations are, however, due to the hand of Gottfried Heinrich Schäfer (1764–1840), librarian at Leipzig University from 1818,¹⁶ the person primarily responsible for the emendations *ope ingenii* and the changes in punctuation. As a matter of special pride, Kühn could announce as his special contribution the *editio princeps* of the compendium on the pulse, of the commentary (spurious, even if not recognised as such) *On Hippocrates' 'Humours'* and of the missing section from *The Capacities of the Soul Depend on the Mixtures of the Body*.

Remarkably, Kühn's preface did not comment upon the ordering of the texts. In fact, aside from some minor changes,¹⁷ the disposition was simply taken from the Juntine editions (itself loosely adopted by Chartier),¹⁸ an arrangement that generated a strong sense of coherence, with the introductory texts followed by natural philosophy, natural faculties, anatomy, functions of the parts, psychic faculties, healthy regimen, foodstuffs, diagnostic signs and pathology, therapeutics, pharmacology, Hippocratic commentaries, and finally the varia and spuria. Kühn's 'systematic' Galen was going to shape the views of the next generation of historians. However, it strikes us as singularly innocent given the clear terms in which the problematic choice between a 'systematic' and a 'chronological' arrangement ('the only one that will give readers the true and genuine Galenic doctrine') had been cautiously worded by Johann Christian Gottlieb Ackermann (1756–1801) in the chapter reprinted as a preface to Kühn's first volume.¹⁹

15 The latter also partially published by Gruner (1789).

16 Biographical details of this prolific philologist in Hoche (1890: 524–5).

17 Examples of Kühn's own arrangement include *On Semen* paired with *On the Formation of the Foetus*, *The Capacities of the Soul Depend on the Mixtures of the Body* matched with the other texts on psychic faculties, the grouping of various works related to healthy regimen, etc.

18 On early printed editions and translations of the Galenic corpus, see Fortuna (Chapter 22) in this volume.

19 Kühn (1821: I.lxiv–lxv) (= Ackermann). Ackermann (1821: 17–56) is taken from the third edition of the *Bibliotheca Graeca* by Fabricius et al. (1796: v.377–500), where it replaced the chapter on Galen by Philippe Labbé, first published in 1660; see Labbé (1717: 509–27). As well as an exposition of Galen's life, Ackermann gave an updated census of the manuscripts not replaced until Diels' catalogue (1906). Ackermann chronologically arranged and surveyed Galen's works 'in the sequence in which they have probably been written,

But a historical evaluation of Galen's work and influence was definitely not on Kühn's agenda, and nowhere can one gain a better understanding of his method and concerns than by reading his notes to Ackermann's *Vita Galeni*, which show philological concern and attention to detail in pointing out, for example, the correct spelling of Favorinus; or how the Italian translation of *On the Preservation of Health* (Palermo, 1650) by Giuseppe Galeano (1605–75) was actually a compendium rather than a complete translation; or adding the recent (Paris, 1814) edition of *On the Capacities of Foodstuffs* by Adamantios Korais (1748–1833).²⁰ A painstaking job that included updates to the list of manuscripts, suggested identifications of lost titles, and open questions for the future editors.

A precious addition was the index compiled by Friedrich Wilhelm Assmann (1800–77),²¹ derived from those of Guglielmo Grataroli (1516–68) in the Basileensis and especially of Antonius Brasavola (1500–55) in the second Giuntine.²² Be it taken as abridgement or depletion, rationalisation or oversimplification, nowhere more than here are the intentions of the editor of giving a handy, user-friendly research tool clearly stated. This goal he certainly accomplished and, with all its limitations and in spite of referring to the Latin rather than the original Greek, the index was never superseded by the indexes to the individual *Corpus Medicorum Graecorum* volumes, and served as a valuable research tool until the advent of the *Thesaurus Linguae Graecae*.

To sum up, it would be unfair to judge Kühn's Galen with the gauge of eighteenth-century German classical philology. In spite of his ubiquitous presence at the *Alma mater* Lipsiensis, there seems to have been little exchange between Kühn and his colleagues of the philological faculty, where the linguistic and stylistic interests of Gottfried Hermann (1772–1848), to whom the development of Greek studies in Leipzig was to a great extent due, was unlikely to overlap with Kühn's antiquarian approach.²³ His interest in Galen was that of a doctor for whom the knowledge of the ancient masters was a requisite of *Bildung* (good education), a token of professional identity and a mark of social

with an additional arrangement in line with the boundaries of the medical system', and after reconstructing Galen's life from his biographical remarks, outlined a chronology of his works on the basis of Galen's own bibliographical accounts and internal cross references, also used for establishing the authenticity of works.

20 Kühn (1821: I.lxix, cxxxv, cxxxvii).

21 Assmann was at the time working as prosector and teaching anatomy at Leipzig; see his biographical details at http://histvv.uni-leipzig.de/dozenten/assmann_fw.html (accessed 2 June 2017).

22 The debt is acknowledged by Kühn (1833: xx.vii).

23 On the philological faculty of Leipzig see Deufert and Sier (2009), esp. 579–81 for the Greek studies.

status, and his contribution should be better evaluated within the context of *historia literaria* (*Litterär-geschichte*), that comprehensive, learned compilation of bibliographical repertoires that arranged printed works in a way not unlike that in which Carl Linnaeus (1707–78) had arranged living species.²⁴ Neither a historian nor a philologist in the ‘scientific’ sense these disciplines were acquiring at the start of the nineteenth century, Kühn must be seen as a man of learning only too fond, as many eighteenth-century German academic doctors were, of encyclopaedism, or ‘polyhistory’.²⁵

Kühn’s edition provided the practical tool of a revised and updated version of Johann Fabricius’ (1668–1736) *Bibliotheca*. He wanted to reignite the study of ancient medical texts by giving a handy, easily available edition, and with the conclusion of his editorial project already in sight he could proudly claim ‘to have liberated and made accessible the work of the Greek doctors incarcerated in the libraries’, and to have so contributed to bringing them again into the public domain.²⁶ To a certain extent, the goal had been accomplished.

While Kühn’s Galen was a unity within the compass of *historia literaria*, the new ‘pragmatic’ history (*pragmatische Geschichte*) of Kurt Polycarp Joachim Sprengel (1766–1833) first located Galen in a structured historiographical framework. An eminent botanist, physician, and academic (Halle), Sprengel displayed outstanding linguistic competence in his multifaceted activity as translator, journalist, editor, and author. For him, too, the knowledge of Greek was not just the key to the ancient texts, but also a major element of *Bildung*.²⁷ His Galenic competence shows in his early works on Galen’s theory of fevers and philosophical ‘system’, but the role of the Pergamene is best put in perspective in the *Versuch einer pragmatischen Geschichte der Arzneikunde*.²⁸

By narrating the history of medicine as a sequence of events determined by intrinsic relationships, and by moving from the history of books to the history of culture, Sprengel did away with the catalogue records of *historia literaria*. Descriptive, classificatory history became genetic, causal history, with

24 Wellmon (2015: 57). On *historia literaria* see Wellmon (2015: 53–63); Kurz (2005). For Kühn’s formidable attempt at a universal medical bibliography, see Kühn (1794).

25 If Kühn’s activity seems quite extraordinary, the astonishing range of interests of some of his predecessors at Leipzig may well have paved the way, see Riha (2009: 960–4).

26 Kühn (1830: XIX.v). In different terms, even Daremberg had to acknowledge the fact; see Daremberg (1851: xvii): *cette édition, qui n’a guère d’autre avantage que la commodité du format* (‘This edition, which has no other benefit than the convenience of its format’).

27 Biographical details in Wunschmann (1893: 296–8). For an analysis of the historiographical debates and the academic context see Broman (1996: 136–43); Lammel (2004: 33–52), with comprehensive bibliography.

28 Sprengel (1792).

the discrete units of meaning turned into historical periods.²⁹ In this narrative, Galen represented the conclusion of the creative era of ancient medicine before the dogmatic deluge of the Dark Ages.

In Galen Sprengel found a coherent system built on the foundations of previous tradition.³⁰ He felt an affinity for Galen's teleology and concept of divine providence,³¹ but also praised his anatomy and his – still relevant – doctrine of the pulse.³² However, his contrast of Galen with Hippocrates reflects a phase of German medicine in which case histories served to justify its aspiration to the status of science (*Wissenschaft*).³³ Thus, the exemplary bedside diagnostics of Hippocrates seemed more real than Galen's speculations: 'We find in him almost no simple Hippocratic description and case history. His great love of theory seems to have prevented him from becoming a good observer'.³⁴

A similar stance was taken by Francesco Puccinotti (1794–1872), holder of the medical history chair at Pisa from 1846 to 1860.³⁵ A fervent neo-Hippocratic whose aim was to restore the true spirit of Hippocrates against the metaphysical dogmatism of Hoffmann, Stahl, Mesmer, Hahnemann, and Brown, Puccinotti saw in Galen a systematiser excessively fond of Aristotelian aprioristic logic, oblivious of the Hippocratic empirical observations and responsible for the decadence of Greek medicine: 'Galenic medicine as a whole is but the conclusion and the final stage of the corruption of Greek science occurred in Alexandria'.³⁶

Puccinotti's censure was not widely shared. The historian-bibliographer Johann Ludwig Choulant (1791–1861)³⁷ saw in 'the completeness of Galen's system, still based on the observation of nature', the reason for the survival of his doctrines through the ages,³⁸ and while acknowledging Galen's impact

29 On the contraposition of *Litterärsgeschichte* and *Pragmatische Geschichte* see Kurz (2005), together with Broman (1996: 136–43) and Lammel (2004: 41–4).

30 See Sprengel (1792: 90).

31 Sprengel (1792: 98; 1794: 117–95).

32 Sprengel (1792: 119).

33 Cf. Broman (1996: 138–9).

34 Sprengel (1792: 118). For Sprengel's Hippocratism also see Sprengel (1789–92). On the idealisation of Hippocrates in late eighteenth-century Germany, see Broman (1996: 138–43).

35 For a recent evaluation of Puccinotti (1850) see Luceri (2011).

36 Puccinotti (1850: 655).

37 See Hirsch (1876: 139).

38 Choulant (1822: 4). The pronouncement was reiterated in Choulant's *magnum opus*, the bibliographical handbook of ancient medicine, an updated version of the old *historia literaria*; see Choulant (1828: 62). For an idealised vision of Galen as a unifier of the Hippocratic-Alexandrian tradition – looking forward to a similar development in German medicine, cf. Leupoldt (1827).

even on modern medicine,³⁹ Choulant set Galen in a historical perspective by recognising his pivotal role in the transmission of ancient medicine. Galen's works were *historically* important because they assisted the understanding of Byzantine and Arabic medicine, and also for being a 'treasure trove' of previous doctrines. But they were *practically* important, because of their sharp medical observations and Hippocratic interpretations.⁴⁰

A momentous shift was meanwhile being initiated by Justus Friedrich Karl Hecker (1795–1850), professor of the history of medicine at Berlin from 1822 to 1850, editor of the *Litterarische Annalen der Gesammten Heilkunde* and founder of historical pathology. If Kühn could still contemplate a medical readership (or, studying the great doctors of the past for the benefit of the doctors of present),⁴¹ in the same years Hecker was giving medical history an academic life of its own as a branch of the new science of historiography, with individuals seen in context of peoples and spirit of the age.⁴² Being tightly 'bound to the destiny of peoples and states', history of medicine transcended the interest of medical practitioners.⁴³

For Hecker too, Galen personified the summa of rational medicine. His pathology and diagnostics had been relevant until modern times, particularly the doctrine of the pulse.⁴⁴ However, the yardstick for bedside observations was Hippocrates: 'This is especially true of Galen's theory of clinical signs, where he, in spite of his great admiration for Hippocrates, could never master the necessary artistic simplicity'.⁴⁵ All the more relevant, since observations could now provide the ground for historical pathology.⁴⁶

In Hecker's work we see medical history establishing itself as an academic subject, but students' response was a different matter. Courses on history of medicine had been offered since 1811 in the new Berlin University.⁴⁷ Hecker led disputations (*Disputandi Exercitationes – Lateinisches Disputatorium*) on

39 See Choulant (1828: 62).

40 See Choulant (1828: 62).

41 See Kühn (1830: XIX.v).

42 See Hecker (1822: 1).

43 For Hecker's definition of the aims and objects of history, see Hecker (1822: 1–4), to be compared with his father's account in Hecker (1793: 1–16).

44 *Das Brauchbare daraus* [i.e. the doctrine of the pulse] *hat sich bis in die neuere Pulslehre fortgepflanzt*. Hecker (1822: 507), see also Hecker (1822: 501) and cf. Hecker (1817).

45 Hecker (1822: 506–7).

46 For Hecker's use of Galen in reconstructing pathological evidence, in spite of the paucity of information provided, see Hecker (1835: 18–24).

47 A list of the lectures at Berlin University between 1810 and 1834 is given by Virmond (2011). Additional remarks on the students' response and the eventual discontinuation of the chair, see Winau (1983).

medical-practical topics and gave public lectures, in Latin. However, some courses failed to attract any medical students or had to be cancelled due to the insufficient linguistic competence of the students.⁴⁸ Celsus, the Hippocratic *Aphorisms* and *Prognostic* were commented on between 1813 and 1832, with public lectures mostly in Latin. Galen, however, is absent. His systematic medicine did not appeal to practitioners and was irrelevant to the new specialist disciplines. The diagnostics for which he was still praised had been superseded by techniques such as percussion, auscultation, microscope observation, and chemical analysis, and in bedside practice the model was Hippocrates.⁴⁹ As early as a decade after its publication, Kühn's Galen could be purchased at half of the original price,⁵⁰ and even a vocal advocate of the value of history for medical professionals such as Heinrich Haeser (1811–85), could do little more than generically praise, in the wake of Choulant and Hecker, Galen's blend of philosophy and empiricism. His *Archiv für die gesammte Medicin* (1840–9) a medical journal of strong historical orientation, barely mentions Galen.⁵¹

A scholar who nurtured little doubt about the utility of medical history was Charles Daremberg (1817–72), whose three-decades long involvement with Galen marked a cornerstone in Galenic reception. If Kühn had conveyed the Renaissance Galen into the nineteenth century, Daremberg brought it into modernity.⁵² His pioneering medical thesis on Galen's anatomy, physiology, and pathology of the nervous system already proclaimed the need to liberate Galen from the disfiguring veil of scholasticism.⁵³ A task for which the interpreter still had to take into account the Renaissance commentators from Vesalius to Hoffmann, but also be acquainted with the modern medicine of Malgaigne, Magendie, Cruveilhier, Broc, Müller, and Adelon. The path opened

48 Virmond (2011: 480).

49 For an overview of the interconnections between *Bildung*, neoclassicism and Hippocratism in Germany around the turn of the century, see Broman (1996: 140–1).

50 See Choulant (1841: 113), quoted by Nutton (2002: 1).

51 A controversy with Carl Wunderlich over the value of the study of the history of medicine, an echo of which resounds in Daremberg (1853: 4), is discussed by Temkin and Temkin (1958). With the Paris chair being discontinued, around 1840, apart from Italy, the only two chairs of history of medicine were Berlin and St Petersburg. For Haeser's appraisal of Galen (in an academic textbook), see Haeser (1845: 86); and vi, xi–xii for his remarks on the role of history of sciences (xii: 'History is not a part of the science, but the science itself considered from a higher point of view').

52 On Daremberg's approach to the history of medicine in the context of positivism, see Gourevitch (2004).

53 Daremberg (1841: 6).

by Littré's Hippocrates had to be followed by venturing into the 'untapped source' (*mine vierge*) of Galen.⁵⁴

As for Galen's theoretical views, Daremberg deemed his natural philosophy inconsistent and of limited value.⁵⁵ He found no innovation in his logic – although the account of the fourth type of syllogism could now be discussed in more detail thanks to Minoides Mynas' (1788–1859) *editio princeps* of the *Introduction to Logic*.⁵⁶ But in spite of an unfavourable assessment of his originality,⁵⁷ he saw in Galen a rich, unexplored territory for the history of philosophy, which for example gave an unrivalled exposition of the Stoic theories of the soul, or which could shed new light on Descartes' identification of soul and mind in denying any kind of soul to animals – by pointing at its similarities with Stoicism.⁵⁸ Not least, this was an author who, in spite of occasional lapses (influence of the moon, value of dreams and charms), could gain a positivist's appraisal for not succumbing to the age's scepticism and mysticism.⁵⁹

Daremberg's most ambitious plan was going to be the collection of Greek and Latin medical writers (*Collection des médecins grecs et latins*) from Hippocrates to John Zacharias Aktouarios, in collaboration with Ulco Cats Bussemaker (1810–65) and William Alexander Greenhill (1814–94) and a substantial input from the unpublished papers of Friedrich Reinhold Dietz (1805–36). Not the first to attempt it,⁶⁰ Daremberg brought into the venture a positivist approach by envisaging an exhaustive preliminary collation of the manuscripts,⁶¹ followed by a French translation with detailed textual notes on the model set by Émile Littré (1801–81).⁶² The method of experimental sciences was being applied to history: 'If facts are the very substance of science, texts are the substance of history. This is our experimental method as historians'.⁶³

54 Daremberg (1841: 86).

55 Daremberg (1848a: 4, 10, 20 and 24). This was the first analysis of Galen's philosophy to appear since Sprengel (1794: 117–95).

56 Mynas (1844) – on which see the fiery review of Prantl (1855: 591).

57 See also Daremberg (1848b: 1): 'all too often uncertain and in contradiction with himself, eclectic in philosophy even more than in medicine'. This is the first edition of the Greek text.

58 On Galen as testimony on texts lost in the direct tradition see also Daremberg (1851: xiv).

59 Daremberg (1848a: 22–4).

60 See above, n.12.

61 Daremberg (1853).

62 In Daremberg's view, only translations into modern languages would not force to compromises and could really help to interpret the text, see Daremberg (1851: xlv). On the controversy between Daremberg and Greenhill about the use of French rather than Latin, see Gourevitch (1994: 296–307).

63 Daremberg (1870: xiv).

Neither biography nor bibliography, history of medicine had become the study of texts and facts. Thirty years after Kühn, the priorities could not have been more different.

Ancient medical texts lay neglected by doctors ignorant of classical languages and by philologists ignorant of medicine, and Daremberg's far-reaching program aimed at submitting them to the same kind of textual analysis bestowed upon literary texts as well as analysing their specific medical identity, a task for which he personally replicated all of Galen's dissections. For Galen, the gem of the *Collection*, this looked like the promise of a new era: 'For Galen, all or almost all remains to be done: the ground is hardly cleared'.⁶⁴

The collaborative international project only saw the publication of Bussemaker's Oribasios, with the translations of selected Galenic works, including *The Capacities of the Soul Depend on the Mixtures of the Body*, *On the Function of the Parts of the Body*, *On the Natural Capacities*, *On Affected Parts*, and *Therapeutic Method*, following within three years.⁶⁵ The exhaustive textual notes were demanded by the hiatus between contemporary anatomy, physiology, and pathology (not to speak of chemistry) and Galen's.⁶⁶ No longer a physician's legitimisation of status, the study of Galen moved into the realm of historiography, which encompassed Galen's fortunes in the Late Empire, Middle Ages, and Renaissance.

Still, Daremberg addressed his work to doctors rather than 'erudits', with the knowledge of Galen being relevant to medical men not just to open their minds and avoid replicating the errors of the past, but as an exemplary system in an age that, eminently historiographical and critical, was characterised by the absence of a predominant system. And if Galen's human and comparative anatomy or his embryogenesis were largely irrelevant, the topical diagnostics of *On Affected Parts* was the one field in which Galen could still be seen as being ahead of modern medicine.⁶⁷

In spite of 'his tyranny of physiology over pathology' – only dispatched by Marie François Xavier Bichat's (1771–1802) researches on the specific properties

64 See Daremberg (1851: xxviii–xxxii). On the other side of the Atlantic, a total lack of direct knowledge of Galen among doctors was claimed by Coxe (1846).

65 Daremberg (1854–6). Some of the translations, praised by Temkin and by more recent scholarship, were not superseded for at least a century; see Temkin (1973: 189) and, e.g., Gourevitch (2004: 68).

66 Daremberg (1854–6: iv).

67 Daremberg (1854–6: vii–xi). On the role of medical history cf. Littré's words quoted in the preface of Daremberg (1870: v): 'The science of medicine, if it does not want to be reduced to the rank of *métier*, must take care of its own history, and look after the old monuments that the past has bequeathed to it. The task of the historian is to follow the development of the human spirit in time'.

of tissues and François Broussais' (1772–1838) denial of morbid entities⁶⁸ – and in spite of his theoretical dogmatism and finalism, Galen's 'experimental physiology' and topical diagnostics would only be equalled in modern times by Bichat, Magendie, Flourens, Longet, Bernard, Bell, Burdach, Müller.⁶⁹ The thesis of *On Affected Parts* that no function is impaired without the relevant part being impaired, and the recourse to 'rational diagnostics' to establish the relation between nature, seat and symptoms of the disease in absence of precise diagnostic instruments, were in Daremberg's view Galen's highest achievements.

Inspired by Daremberg (although from the contrasting perspective of an academic philosopher), a sizeable amount of papers devoted to Galen's philosophy and addressed to a readership of neither doctors nor philologists were produced by Emmanuel Chauvet (1819–1910). In Galen, Chauvet saw 'the philosopher doctor *par excellence* of the ancient world', author of a complete philosophical system whose peak lay in the research of the divine presence in the bodily organism and of the purposive organisation of nature carried out in *On the Function of the Parts of the Body*.⁷⁰ But the spiritualist Chauvet, the translator of Plato, was less enthusiastic about the materialistic stance of *The Capacities of the Soul Depend on the Mixtures of the Body* in which he found not just a clear statement of the dependence of the soul from the mixture of the elementary qualities of the body, but the actual identification of the soul with the qualities themselves. Galen had misunderstood Aristotle in making the soul material and therefore inverting the hierarchy between form and matter, but this was excusable insofar as this was Galen the doctor speaking, whereas in *On the Function of the Parts of the Body* Galen the philosopher rightly recognised the vital force of the soul: 'These two opinions are both held by Galen, the physician and the philosopher. Why should we marvel, if the doctor and the philosopher are strangers to one another, and like two different persons?'⁷¹

68 See Daremberg (1870: xi, 23).

69 Daremberg (1870: 228).

70 Chauvet (1886: lxxii and lxxx). The book, which devotes almost 500 pages to Galen, draws on Chauvet's previous publications; Chauvet (1857a; 1857b; 1867; 1873; 1874; 1882; 1883: 233–63).

71 Chauvet (1886: 303). This odd statement is counteracted by the sharp remark on Galen's stature as a philosopher in J. M. Guardia's review of Chauvet's book; Guardia (1886: 172): 'this bizarre, gaily coloured, multicoloured and versicoloured philosopher persisted in believing in the final causes, which is not likely to commend a doctor to philosophers worthy of the name'.

At the opposite end, Galen, grouped amongst the 'eclectics who do not belong to any precise school',⁷² was portrayed by the historian of philosophy Eduard Zeller (1814–1908) as representative of an unsophisticated empiricism more interested in practical medical problems than in theoretical investigations, an agnostic on the nature of the soul, an eclectic collector of doctrines from Plato, Aristotle, Theophrastus, Eudemus, Chrysippus, who by refraining from taking a definite stance on vital speculative themes such as the substance of the soul failed to show any philosophical originality. A harsh judgement that, apart from legitimising the nefarious category of 'eclecticism', set a sharp divide with the systematic thinker of the old interpretation.

Meanwhile, a generation of German scholars trained in the new philological method started engaging with Galen.⁷³ They showed a keen interest in the everyday life of the ancient world, for which Galen was a precious source. They found in the lamentable standard of Galenic editions ample scope for work that was going to be published in journals shared among a recognised community of philologists. Finally, they read Galen to all intents and purposes as a literary text, or a text worthy of textual analysis without the need for further justifications. Almost none of them had a medical background.

This renewed interest is evident in an article by Joachim Marquardt (1812–82) on ancient 'horologes', a short work that heralds themes of the late nineteenth-century's Galenic research.⁷⁴ The state of neglect in which Galen had been reduced by the negligence of philologists and doctors alike forced Marquardt to give a new text, based on a Laurentianus manuscript, of the passage of *On the Diagnosis and Treatment of the Affections and Errors of the Soul* considered, while the introduction drew from it as a source of evidence on material culture and everyday life, an interest that occupied most of Marquardt's professional life as continuer (with Theodor Mommsen, 1817–1903) of Becker's *Handbuch der römischen Alterthümer*.⁷⁵

The flaws of the editions, and the availability of new manuscript evidence, gave an early opportunity to Marquardt's 23-year old son, Johannes Marquardt (1847–1915),⁷⁶ to publish an entire new text of *On the Diagnosis and Treatment of*

72 Zeller (1865: 734–42). See also Prantl (1855: 591–610) for the definition of Galen (or rather the author of the *Introduction to Logic*, who in Prantl's opinion was not Galen) as an Aristotelian-Stoic 'syncretist', and Ueberweg (1863: 167) ('eclectic').

73 For the relations between medical history and classical philology in late nineteenth-century Germany, see Nutton (2004).

74 Marquardt (1865).

75 For Joachim Marquardt's biography see Bleicken (1990).

76 Many thanks to Klaus-Dietrich Fischer for this reference.

the Affections and Errors of the Soul,⁷⁷ later to become part of Teubner's *Scripta Minora*. Like his father (head of the Gotha Gymnasium), Johannes combined scholarly research with the duties of school teaching (as a *Gymnasial-Lehrer*). And he, too, showed interest in everyday ancient life, already visible in his edition of Galen's little work on the 'small ball game', almost simultaneously published also by Georg Helmreich.⁷⁸

Iwan von Müller (1830–1917) also started his career as a Gymnasium teacher.⁷⁹ Appointed in 1864 to the chair of classical philology and pedagogy at the university of Erlangen (later also *Dekan* and *Prorektor*) and then of Munich, Müller is well known outside the Galenic circles as the mind behind the ambitious project of the *Handbuch der Altertumswissenschaften*. A resolute proponent of a strict connection between school and university teaching, Müller's interest in Galen had nothing to do with medicine.

Müller's first attempt at Galen, the restoration of portions of the text of *On the Doctrines of Hippocrates and Plato*,⁸⁰ stemmed from an interest in Plato.⁸¹ The prefaces commented harshly on the older conjectural method and included philological and stylistic remarks, in the hope that the emendations might contribute to a better knowledge of ancient philosophical doctrines, but no medical matters were mentioned. These academic pamphlets were but a preparation for the complete edition of *On the Doctrines of Hippocrates and Plato*.⁸² Müller was well aware of navigating uncharted seas by choosing a highly unusual topic for classical philologists,⁸³ a text that nobody had properly studied before, and which posited daunting problems of interpretation of the Stoic doctrines. He could piously wish that his work would appeal not only to medical men (for whom Cornarius' adapted Latin translation was most likely provided), but also to philosophers and philologists;⁸⁴ however, the level of philological scrutiny displayed in the 130-page-long introduction (including a short history of the reception of Galen from Byzantium to the present – the first modern history of Galenism), makes this hard reading for anybody but professional philologists. Galen presented a new generation of scholars with new perspectives and new challenges, and gone seem the days in which the erudite doctor could – or should – seriously engage with the Prince of Medicine.

77 Marquardt (1870).

78 Marquardt (1879); Helmreich (1878).

79 See Gruber (1997).

80 Müller (1871; 1872).

81 Müller (1871: 3–4).

82 Müller (1874).

83 Müller (1874: v–vi).

84 Müller (1874: 13).

A philologist who made Galen the fulcrum of a lifelong research activity was Georg Helmreich (1849–1921). With the scrutiny of manuscript evidence now being established as the priority of Galenic research, Helmreich scoured the European libraries for manuscripts during the summer breaks from his duties as Gymnasium professor and rector in Bavaria, and in 1901 started working with Hermann Diels (1848–1922) on the catalogue of the newly established *Corpus Medicorum Graecorum* (for which he also edited one of the texts of the first volume).⁸⁵

A substantial fruit of these productive years materialised with the publication by Teubner of three volumes of works reunited under the title *Scripta Minora*.⁸⁶ This was the German reaction to Kühn, whose conjectural method unsupported by manuscript evidence all three philologists involved (Marquardt, Müller, and Helmreich) deplored. It still did not fulfil Daremberg's aspirations of an exhaustive collation of all the existing manuscripts, but the new evidence was significant. Of the four texts published in the first volume, three (*On the Diagnosis and Treatment of the Affections and Errors of the Soul*, *On the Best Method of Teaching*, and *On the Exercise with the Small Ball*) relied heavily on the precious evidence provided by Codex Laurentianus Plut. 74.3 (which thus gave a substantial contribution to the shaping of the 'new' Galen). And of the twelve texts, seven had already been published as *specimen* editions.⁸⁷

The preface to the first volume gave a detailed textual and stylistic analysis (with a remarkable discussion of hiatus) which is still valuable, while the second discussed how the text of the Hippocratic quotations should be given. This was, after Müller's edition of *On the Doctrines of Hippocrates and Plato*, the first Galen edited according to the principles of modern German classical philology. The selection of texts reflected the interests of the time, with a choice of introductory (*Exhortation to the Study of the Arts*, *On the Order of My Own Books*, *On My Own Books*, *Recognising the Best Physician*), 'philosophical' (*On the Best Method of Teaching*, *On the Sects for Beginners*), psychological (*On the Diagnosis and Treatment of the Affections and Errors of the Soul*, *Customary Practices*, *The Capacities of the Soul Depend on the Mixtures of the Body*) texts, and (hardly to be considered a *minor* text) *On the Function of the Parts of the Body*. The complete absence of texts devoted to pathology, diagnostics, or therapy is no less indicative. Twenty years earlier, Daremberg had recognised

85 Helmreich (1914).

86 Marquardt (1884); Müller (1891); Helmreich (1893). The *Scripta Minora* are the second medical title of Teubner's *Bibliotheca Scriptorum Graecorum et Romanorum* (started in 1849) after Soranus' Latin *Gynaecology* by Rose (1882).

87 Marquardt (1865; 1870; 1873: 389–97; 1879); Müller (1873; 1874; 1879; 1880; 1886).

Galen's highest achievement in the 'rational diagnostics' of *On Affected Parts*. By now, Galenic diagnostics had slipped away from the doctors' interests and was not the priority of philologists.

One should also mention the new interest in Galen's logic, with the new edition of the *Introduction to Logic*, now regarded again as an authentic Galenic work.⁸⁸ The *editio princeps* of the lost Galenic anatomy, from the Arabic, was published by the doctor Max Simon (1863–1909).⁸⁹ Finally, more than one century after Ackermann, the chronology of Galen's life and works was discussed through a detailed analysis of internal references in the influential articles by Johannes Ilberg (1860–1930), which were to provide the basis for Galen's dates well up to the last years of the twentieth century.⁹⁰

The road towards a new approach to Galen had been paved by Daremberg's *Œuvres Anatomiques, Physiologiques et Médicales* (1854–56) and by Teubner's *Scripta Minora* (1884–93). If our contemporary appreciation of Galen, heavily focussed on philosophy, psychology, ethics, and physiology, has to a great extent been shaped by Daremberg, it was the philological method of the latter that cast most of the following century's Galenism.

Since the inception (1907) of the *Corpus Medicorum Graecorum*, textual analysis perhaps became the priority of Galenism, and once again it is easy to see Galen as the pawn rather than the chess player. Scholarly research work supported by German and other European academic institutions had produced results such as Mommsen's *Corpus Inscriptionum Latinarum* and Wilamowitz's revived *Corpus Inscriptionum Graecarum*, Diels' *Commentaria in Aristotelem Graeca*, the *Thesaurus Linguae Latinae* and *Paulys Real-Encyclopädie der classischen Altertumswissenschaft*, while the collaboration between national research bodies was being supported by councils like the new International Association of Academies.⁹¹ The birth of the *Corpus Medicorum Graecorum* (and *Latinorum*), with its generous output of new Galenic editions, must be seen against this setting.

After the ambitious attempts by Pierer, Kühn, Fickel, and Daremberg, the time was ripe for a new collection of the medical writings of antiquity built on solid philological foundations. With thirteen volumes out of the total thirty-two, Galen was once more going to have the lion's share. The definitive plan (drawn by the German Hermann Diels and the Dane Johan Ludvig Heiberg, 1854–1928,

88 Kalbfleisch (1896; 1897). The athetesis had been supported by Prantl (1855).

89 Simon (1906).

90 Ilberg (1889; 1892; 1896; 1897; 1905).

91 See von Wilamowitz-Moellendorff (1927: 70ff) for a brief but passionate tribute to the international collaborative projects flourishing in the last decades of the nineteenth century. For an assessment of *CMG* in this context, see also Jaeger (1932: 29).

at the first meeting of the International Association of Academies in 1901)⁹² was presented as a joint venture of the academies of Berlin, Copenhagen, and Leipzig in 1907, after completion of the catalogue of medical manuscripts, on which nearly thirty scholars from six countries had worked.⁹³

Diels crucially advocated for philology a role of 'science of antiquity' (*Altertumswissenschaft, Historie*) aimed not just at the realm of literary and artistic experience that could still positively affect the present (*das jetzt Fortwirkende und Normgebende der Antike*), but at ancient man in his entire being, works, and thought, as an object of historical consideration.⁹⁴ This vision of classical philology justified its concern with the history of individual sciences (mathematics, astronomy, botany, medicine) not just out of interest for their language but for their content as well, insofar as it contributed to a total representation of ancient culture. Now history of sciences rightfully belonged to the domain of the philologist rather than of the practitioner of those same sciences. Galen's writings were no longer the monopoly of doctors.⁹⁵

The work plan envisaged a critical edition of the preserved texts, as well as a collection of the fragments of those not handed down in their entirety, systematically taking into account the existing Latin, Syriac, Arabic, and Hebrew translations. With a significant shift in methodological perspective, the first Galenic works to be edited were not his introductory works, but his commentaries on Hippocrates, to be used as testimonies of the indirect Hippocratic tradition.⁹⁶ Translations into modern languages had been ruled out due to the international character of the project, and that would only change (from a

92 Heiberg, a specialist in ancient mathematics, had already edited Euclid and Archimedes. On Diels various articles have appeared in *Philologus* 117 (1973), among which Kollesch (1973: 278–83) is particularly pertinent. See also Kern (1907); Braun, Calder, and Ehlers (1995); Calder and Mansfeld (1999).

93 Diels (1905–6). On the genesis of the *CMG*, see Diels (1907; 1908); Deichgräber (1950); Kollesch (1968; 1989; 1999; 2006). For its decline between the two wars, Jaeger (1932) and Deichgräber (1935). On its more recent developments, see Kollesch (1981; 1992). A useful introduction to classical philology as an academic subject in transition between *Bildung* and professional historical discipline is Rüegg (2004: 415–28); see also Grafton (1983).

94 Diels (1908: 722–4). Cf. Deichgräber (1950: 301). Diels' notion of *Altertumswissenschaft* was deeply shaped by his teacher Hermann Usener as well as his friend Ulrich von Wilamowitz-Moellendorff.

95 See Diels (1908: 724): 'Since then (i.e. after Kühn) modern medicine has become independent from the ancient tradition, and scholars have begun to work in a truly philologic way (*rein philologisch*)'.

96 The utility of Galen's commentaries in establishing the text of Hippocrates had already been remarked upon by Ackermann in Kühn (1821–33: 1.clxxxv–vi). After Philumenus, the first two volumes of Galenic commentaries appeared in 1914–15. The first Hippocrates volume and Soranus would only be released in 1927.

perceived need to also appeal to medical people with little training in classical languages) in the late 1950s.⁹⁷

During the whole course of the nineteenth and twentieth centuries a kind of *sui generis* involvement with Galen showed in a steady flow of – mostly German – academic dissertations. With the medical profession becoming more strictly monitored, and the increasing requirements for a university degree, this was becoming a snug recess supportive of Galenic life. Doctoral medical dissertations served to attest the command of the principles of Galenic medicine, with a preference for physiology and therapeutics, as well as the ability to write in Latin,⁹⁸ but were often based on Latin translations and made little reference to the Greek.⁹⁹ As might be expected, one can find acute historical awareness and attention to terminology in works such as Hecker's habilitation thesis (*pro venia docendi*),¹⁰⁰ but on the whole this is a kind of self-referential production with little impact outside the academic boundaries.¹⁰¹

The scene changed in the last three decades of the nineteenth century when, with philology having been absorbed into *Altertumswissenschaft*, and the study of ancient science having become an accredited member of classical philology, dissertations could again be innovative pieces of research work written by professionals for members of the same guild, rather than by doctors forced to officially display awareness of the history of their own profession. This is an emblematic indicator of the deep change Galenism was undergoing, and because of the importance of its author one should mention at least Hermann Diels' philological dissertation (Bonn) on the (pseudo-Galenic) *History of Philosophy*, but many others could be added from the universities of Erlangen, Göttingen, and Berlin.¹⁰²

Nonetheless, medical dissertations continued to be published for the benefit of future doctors, with the faculty of Berlin particularly prolific around the turn of the century. A vast and mostly forgotten literary production, more quoted than studied today, that in its choice of specialist topics extrapolated from various works such as Galen's laryngology, treatment of ulcers, rhinology

97 See Schubring (1957: 307).

98 Dissertations could still be written in Latin until at least the First World War; see e.g. Wagner (1914).

99 See, e.g. Gieseler (1824).

100 Hecker (1817). It is somewhat ironic, however, that this wholehearted praise of Galen's sphygmology appeared in the very same years in which Laennec was developing his diagnostic technique of 'mediate auscultation'.

101 With some exceptions, of course. Daremberg (1841) himself started working on Galen in his medical dissertation.

102 See, e.g. Bonnet (1872); Helmreich (1876); Petersen (1888); Kalbfleisch (1892).

etc., in its lack of textual concern and in its neglect of historical context, seems to be the last survivor of a century-long tradition of un-historicised and un-philological Galenism.

At the far end of the spectrum, Galen could still trigger a reflection on theoretical and ethical issues of contemporary medicine. Remarkably, not in a critical edition or a scholarly article, but in a short novel published as a small, stylish, art book. Through the description of 'a day in the life of Galen', Theodor Meyer-Steineg (1873–1936) showed the relevance to modern doctors of themes fiercely debated by Galen and his contemporaries, such as the contrast between mechanicism and finalism, the relevance of causal explanation, the validity of vivisection, the theoretical foundations of medicine, and the effectiveness of surgery.¹⁰³ In his review of the book, George Sarton (1884–1956) expressed the view that the precedent, although praiseworthy, should not be followed by the historian of medicine.¹⁰⁴ For a long time it was not, and only in the last decades of the new century Galen would have crossed, once again, the strict boundaries of academic disciplines.

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103 Meyer-Steineg (1913a). By the same author, see also the more traditional Meyer-Steineg (1911; 1913b).

104 Sarton (1914: 204).

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PART 5

Galen in Other Cultures



The Reception of Galen in Hebrew Medieval Scientific Writings

Carmen Caballero-Navas

The Hebrew scientific library was inaugurated around the mid twelfth century, when Jews – predominantly those who had migrated from al-Andalus to the northern Iberian Peninsula and the south of France – began the immense labour of translating scientific and philosophical works into Hebrew from Arabic and Latin. Growing over the following two centuries, this unprecedented undertaking provided the Jewish communities of the Christian West with a wealth of Graeco-Arabic knowledge of which they had previously been unaware.

The bulk of the translated works predictably included parts of Galen's vast body of writing, which had been translated into Arabic by the second half of the ninth century and had begun to be translated from Arabic into Latin by the end of the eleventh century.¹ Versions of Galenic writings from both languages had appeared in Hebrew by the end of the twelfth century and continued to be produced until the fifteenth century. In addition, Galen's philosophical and medical theories and concepts, conveniently elaborated and embedded in works by Arab and, to a lesser degree, Jewish authors who originally wrote in Arabic also reached Jewish audiences through Hebrew translations.

Prior to the beginning of this translation movement and contemporaneously with it, Western Jews had already had access to Graeco-Arabic science and philosophy in general and to Galen's works and theories in particular through Arabic.² This is the case of the Jews of al-Andalus who had adopted the Arabic language and cultural model like all their co-religionists living under Islamic rule. Interestingly, Arabic continued to be a means for the transmission of medical knowledge among Jews as late as the fifteenth century in some Iberian regions, even after they had been conquered by Christians.³ The cultural

¹ Jacquart and Micheau (1996: 32–44); Gutas (1998: 118–19).

² I have not included Byzantine Jewish communities in this overview, because their cultural life had different dynamics than that of their Western co-religionists.

³ The most interesting Jewish contribution to medieval Castilian medicine is the *Kitāb al-Ṭibb al-qasṭālī al-malūkī* (*Book of Royal Castilian Medicine*), written by an unknown Jewish doctor from Toledo, probably during the first decades of the fourteenth century. The book is based

hybridisation on the Iberian Peninsula opened additional routes for the spread of Galenised science among non-Arabic-speaking Jews through the translation into Hebrew of commentaries, adaptations, and epitomes elaborated in Arabic by Jewish authors; the translation into Hebrew of works produced in Arabic by Jewish authors who relied on Galenic works and quoted from them; and the circulation of works originally written in Hebrew that included excerpts and partial translations from Galen's works quoted by their authors from the Arabic sources available to them. Thus, as others have noted, although the number of translations into Hebrew from the Galenic corpus was small, Galen's influence on Jewish medicine and thought was not.⁴ Not only his ideas, but also fragments and quotations from complete Galenic works never translated into Hebrew reached European Jewish audiences in that language, contributing to the Galenisation of their understanding of science and medicine.

The development of science in medieval Jewish cultures has received significant attention over the last few decades.⁵ Much research has been carried out, and many discoveries made since Elinor Lieber published her pioneering study on the transmission of Galen's works in the medieval Islamic world.⁶ This chapter presents a brief overview of the current state of the art on the reception of Galenic as well as pseudo-Galenic texts and ideas in the Hebrew scientific corpus with a view towards better understanding how they were transmitted and used in Hebrew and other languages by Western Jews at various times during the Middle Ages. The focus here is on the consumption of Galenic works and ideas through quotations and the translation of Galenic and pseudo-Galenic works into Hebrew.

1 Quotations: an Indirect Path for the Reception of Galen in Hebrew

As noted, Jewish communities in the Islamicate world adopted the Arabic language and cultural model, which allowed them to take advantage of the Arabic appropriation of Greek science and philosophy. In the case at hand, Arabic afforded them access to the extensive Galenic corpus. Whether directly from Galen's works or through the convenient elaboration and adaptation of his medical theories and concepts – first by Byzantine encyclopaedists and

on direct knowledge of Galen's medical corpus and a wide range of medical works of Arabic Galenism. For an edition and Spanish translation, see Vázquez de Benito (2004).

4 Lieber (1981: 167–8); Ferre (2012: 67).

5 Paraphrasing the title of the edited volume *Science in Medieval Jewish Cultures* by Freudenthal (2011).

6 Lieber (1981).

later by authors from the Arabic medical and philosophical tradition – Jews benefitted from the ‘Galenisation’ of Arabic medicine.⁷ One can safely assert that Jewish authors of science and medicine belonged to the Arabic (medical) tradition, not only because they wrote their works in Arabic, but also because they shared their scientific views and ideas with their Arab contemporaries.⁸ Based on this premise, the initial focus here is on those Jewish authors writing in Arabic whose works were translated into Hebrew at a later stage.

The obvious author with which to begin is Maimonides (d. 1204), the highly esteemed physician and medical author, philosopher, and exegete of medieval Jewish cultures and whose heavy reliance on Galen’s medical theories is well documented. Maimonides authored eleven medical works,⁹ three of which are profoundly Galenic.¹⁰ His commentary on the *Aphorisms* of Hippocrates follows Galen’s commentary and was translated into Hebrew three times, while his *Compendium of [Galen’s] Method of Healing* (*Talkhiṣ Kitāb ḥīlat al-bur*) was never translated into Hebrew.¹¹ His *Medical Aphorisms* offered an extensive synthesis of contemporary medical knowledge organised into twenty-five chapters.¹²

Maimonides seems to have written *Medical Aphorisms* (*Kitāb al-Fuṣūl fī al-ṭibb*) around 1185, with the exception of the last chapter, which was written at an uncertain date at the end of his life and edited after his death by someone else.¹³ The book covers a spectrum of medical subjects, including anatomy, physiology, pathology, symptomatology, aetiology, surgery, gynaecology,¹⁴ and hygiene. The last three chapters deal, respectively, with explanations of obscure names and concepts in Galen’s works (chapter 23), a collection of rare and interesting cases, mainly from Galen’s writings (chapter 24), and criticism of Galen (chapter 25).¹⁵ These chapters, and indeed the entire work, rely heavily

7 See above n.1.

8 On the difficulty related to determining patterns in the acquisition and transmission of medical knowledge among Jews in the Islamicate world, see Caballero-Navas (2011: 323–4).

9 Davidson (2005: 429–83); Bos (2004: xix–xx). The eleventh Maimonidian medical work, *Treatise on Rules Regarding the Practical Part of the Medical Art*, has been recently identified and published by Bos and Langermann. See Bos and Langermann (2012); Bos and Langermann (2014a).

10 On Galen’s reception by Maimonides, with a particular focus on the latter’s *Medical Aphorisms* (Arabic version), see Langermann (Chapter 13) in this volume.

11 According to Bos (2009: 258), Maimonides is reported to have written twenty-one epitomes from Galen, of which a total of eleven survive in some complete and fragmentary copies.

12 Davidson (2005: 443–52); Bos (2004; 2007; 2010; 2015; 2017).

13 Bos (2004: xx–xxi); Davidson (2005: 446); Langermann (2008a: 326).

14 I discuss chapter 16 of *Medical Aphorisms* in Caballero-Navas (2009; 2013).

15 Bos (2002: 142; 2004: xxi; 2017).

on Galen's medical ideas. According to Herbert Davidson, nine-tenths of the book either derives from Galen's writings or is attributed to him.¹⁶ In fact, Maimonides included quotations, duly attributed, from approximately ninety texts by the Greek physician and took the trouble to cite the work from which he had taken each aphorism.¹⁷ Of note, some of the works quoted by Maimonides are no longer extant in Greek. For example, in chapter 16, on gynaecology, he quotes Galen's lost *Commentary on Hippocrates' 'On Diseases of Women'* (whose authenticity is, however, uncertain) in nine aphorisms (1, 3, 9, 14–16, 20, 30, and 35) out of thirty-eight in total.¹⁸ Other chapters of Maimonides' work embedded fragments of Galenic works that do not survive in the original Greek version, such as *On Problematical Movements* (chapter 7), and *Recognising the Best Physician* (chapter 8, aphorism 21; chapter 9, aphorism 102; chapter 13, aphorisms 18 and 30; and chapter 24, aphorisms 4 and 24).¹⁹ He even preserves some excerpts from the pseudo[?]-Galenic *On the Signs of Death* (*De signis mortis*) (chapter 3).²⁰ In one case, the quotation by Maimonides (chapter 1, aphorism 3), based on a lost Greek manuscript, has preserved a better reading of an excerpt from *On the Function of the Parts of the Body*.²¹

Maimonides' quotations were not generally literal. Although he partly used Galen's words, he also sometimes reformulated the ideas when he found it necessary, either by abridging the wording or by adding explanations.²² On occasion, he inserted himself as a supposed eye witness to a case. For example, aphorism 18 from chapter 16 begins, 'I once saw a woman who had been a widow for a long time', recounting the treatment of a widow who had suffered from uterine suffocation resulting from the retention of her own seed. According to him, she was cured after the midwife applied medicines to her genitalia by means of a pessary, which elicited pain and pleasure similar to that experienced during sexual intercourse, together with the expulsion of thick, retained sperm.²³ Maimonides did not, however, witness the episode, but was

16 Davidson (2005: 444).

17 It is relevant to note that Maimonides used the summaries of several of Galen's writings that he composed in Arabic for the composition of his *Medical Aphorisms*; see Langermann (1993: 177); Bos (2009: 256).

18 Bos (2004: xxi); see also Maimonides, *Medical Aphorisms* (*Kitāb al-Fuṣūl fī al-ṭibb*), 16, ed. Bos (2015) 1–16.

19 Iskandar (1988: 22–3, 130–3).

20 Bos (2004: xxi); see also Bos (2002: 144); Fichtner (2017: 150, no. 419).

21 Bos (2004: xxii).

22 Bos (2004: xxii–xxiii).

23 Maimonides, *Medical Aphorisms* (*Pirqē Mosheh bā-refū'ah*), 16.18, ed. Muntner (1959) 209.1–8; English translation by Rosner (1989: 386). See also the Arabic version: *Kitāb al-Fuṣūl fī al-ṭibb*, 16.18, ed. and tr. Bos (2015) 9–10. On this, see also Caballero-Navas (2013: 62).

merely quoting from Galen's *On Affected Parts*, a work he cites at the end of the aphorism.²⁴ This anecdote, derived from Galen but elaborated by Aetios of Amida, who appears to have introduced the first person,²⁵ became well known and circulated widely, often without attribution, during the Middle Ages. Curiously, it was also recounted in Hebrew by a hitherto unidentified Jewish contemporary of Maimonides from the end of the twelfth or early thirteenth century in the treatise *Zikhron ha-holayim ha-howim be-khlei ha-herayon* (*A Record of the Diseases Occurring in the Genital Members*), which was produced in Castile.²⁶ Here, the sick woman is not said to be a widow and, although the source is not mentioned, it is plausible that the author took it from Ibn Sīnā's *Canon*.²⁷ This example exemplifies how diverse routes existed for the transmission and reception of Galen's excerpts in the Hebrew medical literature.

A second instance that follows a similar pattern of citation is found in aphorism 24 in chapter 24. Here, a personal account presents the case of a woman misdiagnosed by midwives and physicians after a miscarriage. The physician reporting the episode, however, makes the correct diagnosis and is able to help the woman expel a (second) putrid foetus several days later.²⁸ Once again, the physician is not Maimonides, but Galen, from whose *Recognising the Best Physician* Maimonides quotes the incident.²⁹ Aphorism 25 in the same chapter also presents a first-person narration of the treatment, given to a woman with stomach problems. In this case, the quotation is from the *On Theriac to Piso*.³⁰ There are many other instances in which Maimonides uses diverse strategies to excerpt and pass down Galen's works in his *Medical Aphorisms*, something that can really be appreciated in the modern edition and translation of this work.³¹

It stands to reason that Maimonides has been long considered one of the best medieval ambassadors of Arabic Galenism, particularly through the

24 Galen, 6.5, *Loc. Aff.*, ed. Kühn (1824) viii.417; English translation by Siegel (1976: 184).

25 King (2011).

26 *A Record of the Diseases Occurring in the Genital Members* (*Zikhron ha-holayim ha-howim be-khlei ha-herayon*), ed. and tr. Barkai (1998) 118 and 139. This version does not seem to follow Aetios' re-elaboration.

27 Caballero-Navas (2013: 62).

28 Maimonides, *Medical Aphorisms* (*Pirqē Mosheh bā-refu'ah*), 24.24, ed. Muntner (1959) 306.20–27; English translation by Rosner (1989: 387–8). See also the Arabic version: *Kitāb al-Fuṣūl fī al-ṭibb*, 24.24, ed. and tr. Bos (2017) 83–4. On this, see Caballero-Navas (2013: 62).

29 Galen, *Opt. Med. Cogn.*, 13.3–9, ed. Iskandar (1988) 130–3.

30 Galen, *Ther. Pis.*, ed. Kühn (1827) 14.210–94 = ed. Leigh (2015) = ed. Boudon-Millot (2016). English translation by Leigh (2015: 75). Maimonides, *Medical Aphorisms* (*Pirqē Mosheh bā-refu'ah*), 24.25, ed. Muntner (1959) 307.1–5; English translation by Rosner (1989) 387–8. See also the Arabic version: *Kitāb al-Fuṣūl fī al-ṭibb*, 24.25, ed. and tr. Bos (2017) 83–4. On this, see Caballero-Navas (2013: 62, n.11).

31 See above n.12. See also Bos (2002).

dissemination of his *Medical Aphorisms*, which from the thirteenth century on was translated into Latin on several occasions.³² According to Suessman Muntner, Maimonides' *Medical Aphorisms* was considered the 'most widely known and wanted repertorium of Galen' throughout the thirteenth and fifteenth centuries in the West.³³ The work was translated twice into Hebrew: by Zeraḥiah ben Isaac Ḥen in 1277 and by Nathan ben Eliezer ha-Me'ati between 1279 and 1283. The number of copies preserved suggests that the *Medical Aphorisms* circulated widely in Hebrew. Ha-Me'ati's translation has been preserved in twenty-three manuscripts (seventeen in Spanish or Provençal script) and Zeraḥia ben Isaac Ḥen's version in fifteen manuscripts (ten in Italian script).³⁴ Therefore, it would seem, the latter would have circulated among Italian Jews, while Ha-Me'ati's version would be appreciated in Spain and France.³⁵ The considerable number of extant copies bears witness to the dissemination in Hebrew of numerous actual fragments and abridged translations of Galen's works, many of which were never translated into Hebrew in their entirety, from the last quarter of the thirteenth century. Medieval Jewish audiences benefitted from this remarkable route of indirect transmission.

Other Jewish authors who wrote in Arabic also contributed to disseminating Galen's ideas and actual excerpts from his works among their northern co-religionists through their writings being translated into Hebrew. Yet, although the substantial impact of Galen upon many authors and their writings has been well established by scholars, comparative studies identifying parallel passages between the works of those Jewish authors and the Galenic corpus remain rare.

Another path for the dissemination of passages from Galen's work among a Jewish readership has been neglected until recently, but calls for further investigation: excerpts from Galen's works that were read in Arabic by authors who then rendered them into Hebrew for inclusion in their works. The example noted here – that of the philosopher and physician Shem Tov ibn Falaquera (1224–90) – is a significant one.

As a physician, Falaquera was undoubtedly familiar with the Galenic corpus circulating in Arabic around the Iberian Peninsula during the thirteenth century, as well as with the work of eminent Arab authors. In fact, his knowledge on the matter surfaces in a passage of his *Sefer ha-Mevaqqesh* (*Book of the Seeker*), where, through a dialogue between 'the seeker' and a prominent physician, Falaquera provides a list of authors essential for acquiring adequate

32 Bos (2004: xxv); Ferre (2009: 24–9).

33 Muntner (1959: xiii), quoted by Bos (2004: xxv).

34 Richler (1986).

35 Bos (2004: xxv).

medical knowledge. The list, unsurprisingly, includes Hippocrates, Galen, Ḥunayn ibn Ishāq, al-Rāzī, Ishāq ibn Sulaymān al-Isrā'īlī, al-Zahrāwī, and Ibn Rushd.³⁶ Falaquera's quotations of Galen's works, however, are mainly found in his ethical and philosophical works.³⁷

The encyclopaedia *De'ot ha-pilosophim* (*The Opinions of the Philosophers*) is Falaquera's most extensive work. Written around 1270, it is divided into two books, one on natural beings and the other on divine beings. The first and longest one is organised into seven parts, while the second book consists of three. He says in the introduction to this work that it is a compendium of the authoritative opinions of the philosophers. In fact, he often reproduces long excerpts from other authors' works almost verbatim. Just as often, however, he seems to forget to mention his sources.³⁸ Nonetheless, Mauro Zonta identified a lengthy quotation from Galen's *On My Own Opinions*.³⁹

Zonta's analysis of Falaquera's ethical-philosophical works resulted in the identification of many other passages from different Galenic works, prominently *Character Traits*, but also *Exhortation to the Study of the Arts* and *Avoiding Distress*. He even suggested that quotations that could not be identified might have been taken from one of Galen's lost ethical-philosophical writings, basing this view on the issues they address and on certain doctrinal or historical notes they contain.⁴⁰ Both the *Sefer ha-Ma'alot* (*The Book of Degrees*) – a short treatise in three parts, each devoted to describing the three degrees into which man is divided, according to a Platonic model⁴¹ – and *Iggeret ha-Ḥalom* (*Treatise of the Dream*) – organised as two sections, one on the well-being of the body and the other on the well-being of the soul⁴² – contain numerous quotations from *Character Traits*. As in *De'ot ha-pilosophim* (*The Opinions of the Philosophers*), Falaquera does not explicitly mention Galen as the author of his quotations. In fact, as noted, he rarely mentions his sources, and when he does, he generally attributes the citations to Plato or to a 'wise man'. Still, Zonta's study reveals that the main source is the Arabic version of Ḥunayn ibn Ishāq from *Character Traits*.⁴³

36 Caballero-Navas (2011: 236–7).

37 It is relevant to note that no ethical-philosophical works by Galen were translated into Hebrew (Lieber 1981: 167–8). Thus, these quotations are the only Hebrew translations of Galen's such works so far identified.

38 Jospe (1988: 46–8); Zonta (1995); Harvey (2000).

39 Zonta (1995: 26).

40 Zonta (1995: 30–1).

41 Jospe (1988: 42–6); Zonta (1995: 23–4).

42 Jospe (1988: 61–2); Zonta (1995: 24–5).

43 Zonta (1995: 29–30).

Falaquera's quotations follow two different patterns: they are either rather literal, with some minor textual variants notwithstanding, or they are reformulations of a passage that preserve tenuous links with the Arabic manuscript tradition. As noted above, Zonta suggests there are also quotations that do not correspond to Galen's extant works, but that may belong to lost works.⁴⁴ As mentioned, *Sefer ha-Ma'alot* also contains several quotations from *Exhortation to the Study of the Arts*, which is cited following the two above-mentioned patterns, that is, literally or through reformulations, and without explicit acknowledgement of the source.⁴⁵ The short ethical treatise *Iggeret ha-Musar* (*Treatise on Ethics*) also includes an excerpt from *Exhortation to the Study of the Arts*.⁴⁶ Finally, the likewise short treatise *Šeri ha-yagon* (*Balm of Sorrow*), which belongs to the 'consolation' genre, contains a quotation from *Avoiding Distress*.⁴⁷ As the comparative table compiled by Zonta shows quite graphically, excerpts and quotations extracted from the Arabic versions of Galen's works and included in Hebrew treatises form a network of partial translations that constitute an indirect but very effective mode of transmitting scientific knowledge.⁴⁸

2 The Translation of Galenic and Pseudo-Galenic Works into Hebrew

During the twelfth century, Hebrew became the language into which scientific and medical works were translated and in which they were copied, commented on, and to a lesser degree, composed in the Mediterranean West. In the first stage of this movement, the efforts of Arabic-speaking Jewish authors engaged in the large-scale appropriation of science and Graeco-Arabic philosophy began rendering texts on Jewish religious philosophy into Hebrew in order to make them accessible to their co-religionists in the northern Iberian Peninsula and southern France. The second stage entailed the incorporation of non-Jewish authors into the repertoire of texts translated and disseminated in Hebrew.

Both Hebrew science and philosophy depended heavily on Arabic culture from the first moments of this movement until the fourteenth century. A considerable part of the large number of treatises written in Hebrew

44 Zonta (1995: 30–1).

45 Zonta's study includes a table with quotations from *Iggeret ha-Ḥalom* and *Sefer ha-Ma'alot* from *Character Traits* and *Exhortation to the Study of the Arts*, and a parallel Hebrew-Arabic edition and commentary of the excerpts; see Zonta (1995: 32–93).

46 Zonta (1995: 25).

47 Jospe (1988: 34–5); Zonta (1995: 22, 27–28); Salvatierra Ossorio (2010).

48 Zonta (1995: 32–80, 82–123).

consisted of translations of works originally written in Arabic or translated into Arabic from Greek. This does not mean Latin texts were ignored. Early on during this period, the number of scientific works rendered from Latin was very small, but the numbers increased in the subsequent centuries due to the admiration of a minority of Jewish intellectuals for Latin science and culture. This general trend was more pronounced in the field of medicine, thanks to the early demand for Latin texts by Jewish doctors. Gad Freudenthal has compared translation trends and numbers from Arabic and Latin into Hebrew, concluding, 'The rise of medical translations from Latin reflects an increasing involvement of Jews in modern ('bookish') Galenic medicine'; due to this, he asserts, 'Jewish physicians were under pressure to accommodate cutting-edge Latin medicine'.⁴⁹

The translations from the Galenic corpus encompassed a wide range of formats, including treatises, summaries, and adaptations, and incorporated works from antiquity wrongly attributed to Galen (see Appendix). The first systematic translation of medical texts into Hebrew was made not from Arabic, but from Latin, when an anonymous translator from Provence, using the pseudonym Do'eg the Edomite, translated twenty-four medical works between 1197 and 1199. Moritz Steinschneider, the first to analyse each of these translations and establish their dates, argued that the Latin texts Do'eg selected and translated had been studied in Salerno.⁵⁰ In fact, Do'eg appears to have rendered the basic elements of the *Articella* into Hebrew. The inventory of works Do'eg lists in the introduction to his impressive translation project, heavily grounded in the 'Arabic Galenism' that permeated Western medical Latin culture in the twelfth century, was edited by Steinschneider and reproduced in English by Ron Barkai and more recently by Freudenthal.⁵¹

The list of Do'eg's includes six Galenic and pseudo-Galenic titles that were translated from Latin into Hebrew: *Isagoge Iohannitii ad Tegni Galieni* (Ḥunayn's *Introduction to the Art of Galen*, i.e. a Latin translation of an Arabic introduction to Galenic medicine) by Ḥunayn ibn Ishāq; *Microtechne* (*Little Art*, i.e. the medieval name for *Art of Medicine*) by Galen; *Aphorisms and Prognostic*, by Hippocrates, both including Galen's relevant commentary; *Passionarius*, which Do'eg attributes to Galen but was written by Gariopontus; and *Sefer Ha-'em* (*Book on the Womb*) ascribed to Galen, which is the Hebrew translation of the anonymous work *De passionibus mulierum* B, an eleventh-century

49 Freudenthal (2010: 129, n.13).

50 Steinschneider (1893: 711–14).

51 Steinschneider (1888: 6–8); Barkai (1998: 21–7); Freudenthal (2013: 118–20).

pre-Salernitan Latin treatise originated from a previous version (known as A) and the late antique Latin gynaecological treatises by pseudo-Cleopatra and Muscio.⁵²

The first Hebrew translation of a medical book from Arabic was dedicated to Galen. In 1199, Samuel ibn Tibbon, who lived and worked in Béziers, translated Galen's *Microtechne* from Ḥunayn Ibn Ishāq's Arabic version (*al-Šinā'a al-saġīra*) with a commentary by Ibn Riḍwān.⁵³ Shortly thereafter, around 1200, and apparently in Provence, Judah al-Ḥarizi translated two pseudo-Galenic works best known by their Latin names, *De prohibenda sepultura* (*Book on the Ban of Burying*, *Compendium by Abū Sayyid 'Ubaydallah*), and *De anima* (*On the Soul*).⁵⁴

After this early activity translating Galen, no other renditions were produced until the second half of the thirteenth century. The translations up to the end of that century, except for two, were from Arabic. In 1257 (or 1267), Moses ibn Tibbon translated Maimonides' Arabic *Commentary on the 'Aphorisms' of Hippocrates* (*Sharḥ Fuṣūl Abuqrāt*), in which Maimonides followed Galen's interpretations and observations to a large extent.⁵⁵ The interest aroused by this work among Jewish audiences can be measured by the fact that twelve manuscript copies of this translation are extant and that the work was later translated from Arabic two more times, once by Zeraḥiah ben Isaac Ḥen around 1277–90 in Rome and then by an anonymous translator sometime in the fourteenth century.⁵⁶ Moses ibn Tibbon also translated Ḥunayn's *Isagoge* from the Arabic in 1283 or earlier.⁵⁷

Four translators active in Italy conducted their outstanding work during the thirteenth century: Hillel ben Samuel, Nathan ha-Me'ati, his son Solomon ben Nathan ha-Me'ati, and Zeraḥiah ben Isaac Ḥen. Hillel ben Samuel translated Ibn Riḍwān's commentaries on Galen's *Tegni* or *Ars Medica* (*Art of Medicine*) from the Latin version by Gerard of Cremona around 1260. He also translated Galen's commentaries on the Hippocratic *Aphorisms* from the Latin version by

52 This has been edited and translated into English by Barkai (1998: 145–80). See also Green (2000: 29).

53 Steinschneider (1893: 734); Zonta (2011: 24).

54 On the former, see Steinschneider (1893: 656–7); Zonta (2011: 24). On the later, see Steinschneider (1893: 273–5); Jellinek (1852); Fichtner (2017: 99, no. 174). To date, Jellinek's is the only existing edition of the Hebrew version together with the translation to a modern language (German).

55 Steinschneider (1893: 769); Zonta (2011: 32).

56 Steinschneider (1893: 769); Zonta (2011: 35, 46).

57 Steinschneider (1893: 711); Zonta (2011: 37).

Constantine the African.⁵⁸ Apart from translating Maimonides' *Commentary on the 'Aphorisms'*, Zerahiah ben Isaac Ḥen also translated from the Arabic *Kitāb al-ʿIlal wa-l-a ʿrād* (*Book on Diseases and their Symptoms*), *On the Composition of Drugs according to Kind* (books 1–3), and the pseudo-Galenic *On the Regimen of Health* between 1277 and 1290.⁵⁹ Nathan ha-Me'ati translated medical texts exclusively, contributing many Greek works to the Hebrew medical library, such as Galen's *Commentary on Hippocrates' 'Prognostic'* (*Kitāb Buqrāt fī Taqdimat al-maʿrifa*) around 1280, and his *Commentary on Hippocrates' 'Aphorisms'* (*Tafsīr Kitāb Fuṣūl Buqrāt*) in 1283.⁶⁰ Solomon ben Nathan ha-Me'ati translated an epitome of Galen's *Commentary on Hippocrates' 'Airs, Waters, and Places'* (*Tafsīr Kitāb Buqrāt fī al-Ahwiya wa-l-buldān*) from the Arabic in 1299.⁶¹

During the fourteenth century, the number of translations from both Arabic and Latin increased. A number of anonymous translators rendered into Hebrew Maimonides' *Commentary on Hippocrates' 'Aphorisms'*, *Treatise on Phlebotomy* (Latin), *Advice to an Epileptic Boy* (Arabic), *Compendium of Galen's Works on Urine* (Arabic), *Isagoge Iohannitii ad Tegni Galieni* (Arabic), and the pseudo-Galenic *On Melancholy* (Arabic).⁶²

In Barcelona, Boniac Salomo translated Galen's *Kitāb al-Buḥrān* (*Book of Crisis*) from the Arabic at an undermined date.⁶³ Between 1307 and 1308 in Provence, Qalonymos ben Qalonymos translated Galen's *Kitāb al-Ḥuqan* (*Book on Clyster and Colic*) and *Kitāb al-Faṣḍ* (*Treatise on Phlebotomy*)⁶⁴ and in 1322, Shimshon ben Shlomo translated the *Alexandrian Compendia of Galen's Sixteen Works* from Ḥunayn's Arabic version.⁶⁵ Much research has been done on some treatises since Lieber published her work on Galen in Hebrew, which devoted a segment to the transmission of the summaries among Jews.⁶⁶ Most

58 Steinschneider (1893: 734, 788). Zonta (2011: 32). Zonta does not mention the translation of *Tegni*.

59 See Zonta (2011: 35–6). Steinschneider (1878: 197–9) offers an edition of Ḥen's introduction to his translation from an apparently lost Arabic source of *On the Composition of Drugs According to Kind*. See also Fichtner (2017: 147, no. 406). *On the Regimen of Health*, whose Arabic source is neither extant, was edited and translated by Bos and Garofalo (2007: 43–95).

60 Steinschneider (1893: 662); Zonta (2011: 38).

61 Steinschneider (1893: 662); Zonta (2011: 36, 38); Wasserstein (1982).

62 Steinschneider (1893: 655); Zonta (2011: 44). For the *Compendium on Urine*, see Fichtner (2017: 89, no. 127). See also the very interesting discussion on Hebrew uroscopic literature in Visi (2016: 164–5).

63 Steinschneider (1893: 652); Zonta (2011: 43); Fichtner (2017: 54, no. 67).

64 Steinschneider (1893: 552–3); Zonta (2011: 49). Fichtner (2017: 102–3, no. 194, and 59, no. 73, respectively).

65 Steinschneider (1893: 654–6); Zonta (2011: 56).

66 Lieber (1981: 168–71).

of it has examined *On Critical Days*, recently edited and translated by Bos and Langermann.⁶⁷ There are also Hebrew summaries of the following works: *On Sect for Beginners*,⁶⁸ *Microtegni*, *On the Elements According to Hippocrates*,⁶⁹ *On Mixtures*, *On the Natural Capacities*, *On Black Bile*, *On the Preservation of Health*, *On the Different Kinds of Fever*, *On Marasmus*, *On the Pulse for Beginners*, *On Crises*, *On Critical Days*, and *On Urines* (pseudo-Galen).⁷⁰

Sometime before 1337 in Provence, David ben Abraham Caslari of Besalú produced a Hebrew version of Galen's *On the Anomalous Dyskrasia* from Latin. A recent study examines the translation of Galen's original Greek text into Arabic by Ḥunayn in the ninth century, the translation of Ḥunayn's text into Latin by Gerard of Cremona in the later twelfth century, and the translation of Gerard's version into Hebrew by David Caslari.⁷¹ At the turn of the fifteenth century, around 1392–1402, Leon Joseph of Carcassonne did a translation from Latin (or Arabic) of the pseudo-Galenic *On Prognosis Based on the Hour When a Patient Goes to Bed Based on the Science of Astrology*, equivalent to the pseudo-Hippocratic *De esse aegrotorum secundum lunam*.⁷² Finally, the same work was also translated into Hebrew from Latin in 1406 by Tanḥum ben Moses of Beaucaire, in Italy.⁷³

3 Conclusion

The relationship between the medieval Jews and the Galenic corpus was intense. Jews from Islamic milieus, who had participated from the beginning in the processes of transmission and appropriation of Greek science and philosophy in a multicultural context, were highly familiar with Arabic Galenism. They had access to both Galenic works and medieval Arabic and Latin writings highly influenced by Galen, and even contributed their own Galenised works, to a lesser degree. These 'Galenised Jews', who partook of the Arabic cultural tradition, were the first and main mediators to bring to light and pass on this wealth of knowledge to their co-religionists in the north.

67 Langermann (2008b). The editors, Bos and Langermann, list six extant manuscripts (2014b: 88–9).

68 See Fichtner (2017: 10–11, no. 4).

69 See Fichtner (2017: 14–15, no. 8).

70 See above n. 62.

71 Steinschneider (1893: 653); Zonta (2011: 58); Ferre (2012: 67–70); Bos, McVaugh, and Shatzmiller (2014).

72 Steinschneider (1893: 666); Zonta (2011: 62).

73 Steinschneider (1893: 666–7); Zonta (2011: 65).

The Iberian Peninsula – where the borders fluctuated and contact between two distinct cultural areas, al-Andalus and the Christian kingdoms, became increasingly frequent – was the ideal breeding ground for sparking curiosity about Graeco-Arabic knowledge among those still unaware of it. This initial stage was followed by a large-scale appropriation of Graeco-Arabic knowledge by the Jewish communities under Christian rule in northern Spain and southern France and shortly thereafter in Italy. Galenic treatises, adaptations, and summaries were among the first texts translated into Hebrew, both from Arabic and from Latin, coinciding with the Arabic-into-Latin movement.

These translations continued to be produced until the fifteenth century, and although not great in number, they overlapped with other modes of transmitting portions of the Galenic corpus. Western Jews were the recipients not only of the Galenised contents of the Arabic and Latin texts rendered into Hebrew,⁷⁴ but also of longer and shorter passages of different Galenic and pseudo-Galenic treatises through quotations. These quotations of partial and abridged translations into Hebrew stemmed from two main sources: Arabic texts authored by Jewish writers who had cited whole fragments and works originally written in Hebrew whose authors had included quotations from texts generally quoted from the Arabic versions. Actual fragments of Galenic works continued to circulate among Western Jews until the end of the Middle Ages and beyond.

Appendix

The appendix presenting a list of the translations carried out between the late twelfth and fifteenth centuries relies on Steinschneider (1878), Steinschneider (1893), Lieber (1981: 167–86), Zonta (2011: 17–73), Fichtner (2017), and the online Catalogue of the Institute of Microfilmed Hebrew Manuscripts at the Jewish National and University Library (Jerusalem) at <http://web.nli.org.il/> (accessed 12 March 2018), as well as on other authors quoted in the notes to section 2 of this chapter.

74 Although out of the scope of this chapter, it is relevant to note that, inasmuch as a minority of learned Jews was proficient enough to translate from Latin into Hebrew by the fourteenth century, they were also able to read Latin works. Witness to this practice is the Hebrew signature found in a Latin manuscript dated to the late thirteenth/early fourteenth century, which contains Latin versions of six of Galen's medical treatises; see Hartman (2013).

Translations into Hebrew from Galenic and pseudo-Galenic treatises,
epitomes, and adaptations

	Date	Hebrew translator and place	Galenic text	Language(s) of translated text	Hebrew title
1	1197–99	Do'eg the Edomite Provence	Ḥunayn ibn Ishāq, <i>Introduction to Galen's 'Art of Medicine'</i> (1)	Latin Latin translation by Constantine the African	ספר חגואן והוא ספר מבוא אל הספר הנכבד מן גאלינוס הנקרא טגני
2	1197–99	Do'eg the Edomite Provence	<i>Art of Medicine</i>	Latin Latin translation by Constantine the African from Ḥunayn ibn Ishāq's Arabic version	המאסף לכל המחנות (ספר טגני)
3	1197–99	Do'eg the Edomite Provence	Ḥunayn ibn Ishāq, <i>Introduction to Galen's Commentary on Hippocrates' 'Aphorisms'</i>	Latin Latin translation by Constantine the African	ספר אגור (אנפורשמיש)
4	1197–99	Do'eg the Edomite Provence	Hippocrates, <i>Prognostic with Galen's Commentary</i>	Latin Latin translation by Gerard of Cremona from Ḥunayn ibn Ishāq's Arabic version	חידות והשגחות (פרנושטיקאש)
5	1199	Samuel Ibn Tibbon Provence (Béziers)	<i>Art of Medicine</i> accompanied by Ibn Riḍwān's <i>Commentary</i>	Arabic Arabic translation by Ḥunayn ibn Ishāq	פירוש מלאכה קטנה
6	1257 (or 1267)	Moses Ibn Tibbon Provence	Moses Maimonides, <i>Commentary on Hippocrates' 'Aphorisms'</i> (1)	Arabic	(פירוש לפרקי אבוקרט)

Translations into Hebrew from Galenic and pseudo-Galenic treatises, epitomes, and adaptations (*cont.*)

	Date	Hebrew translator and place	Galenic text	Language(s) of translated text	Hebrew title
7	c. 1260[?]	Hillel ben Samuel of Verona[?] Italy[?]	Hippocrates, <i>Aphorisms</i> with Galen's Commentaries	Latin Latin translation by Constantine the African	(אנפוריזמי)
8	Late 13th century	Hillel ben Samuel of Verona Italy (Rome)	<i>Art of Medicine</i> accompanied by Ibn Riḍwān's <i>Commentary</i>	Latin Latin translation from Gerard of Cremona	ספר הטיגני
9	c. 1277–90	Zeraḥiah Hen Italy (Rome)	<i>On the Composition of Drugs According to Kind</i> , Books 1–3	Arabic Arabic translation by Ḥunayn ibn Ishāq?	קטאגניס
10	c. 1277–90	Zeraḥiah Hen Italy (Rome)	Maimonides, <i>Commentary on Hippocrates' 'Aphorisms' (2)</i>	Arabic	(פרוש לפרקי אבוקרט)
11	c. 1280	Nathan ha-Me'ati Italy (Rome)	<i>Commentary on Hippocrates' 'Prognostic'</i>	Arabic Arabic translation by Ḥunayn ibn Ishāq	הקדמת הידיעה
12	1283	Nathan ha-Me'ati Italy (Rome)	<i>Commentary on Hippocrates' 'Aphorisms'</i>	Arabic Arabic translation by Ḥunayn ibn Ishāq	ספר הפרקים לאבוקראט בפירוש גאלינוס
13	1283 or earlier	Moses Ibn Tibbon (in two redactions) Provence[?]	Ḥunayn ibn Ishāq, <i>Introduction to Galen's 'Art of Medicine' (2)</i>	Arabic	ספר המבוא למלאכת הרפואה
14	1299	Solomon ben Nathan ha-Me'ati Italy (Rome[?])	Galen, <i>Commentary on Hippocrates' 'On Airs, Waters and Places'</i>	Arabic	ספר המימות והאזירים לאפוקרט החשוב ממה שבארר גאלינוס

Translations into Hebrew from Galenic and pseudo-Galenic treatises, epitomes, and adaptations (*cont.*)

	Date	Hebrew translator and place	Galenic text	Language(s) of translated text	Hebrew title
15	14th century [?]	Boniac Salomon Iberian Peninsula (Barcelona)	<i>Book of Crisis</i>	Arabic Arabic translation by Ḥunayn ibn Ishāq	ספר בחראן
16	14th century [?]	Anonymous	<i>Treatise on Phlebotomy</i>	Latin	ספר ההקזה של גידים
17	14th century [?]	Anonymous	<i>Advice to an Epileptic Boy</i>	Arabic Arabic translation by Ḥunayn ibn Ishāq	ספר בהנהגת הנער הנכפה
18	14th century [?]	Anonymous	<i>Compendium of Galen's Works on Urine</i>	Arabic Arabic translation by Ḥunayn ibn Ishāq	אסיפת מראות השתן
19	14th century [?]	Anonymous	Ḥunayn ibn Ishāq, <i>Introduction to Galen's 'Art of Medicine'</i> (3)	Latin Latin translation by Mark of Toledo	מבוא / יואניציאו
20	14th century [?]	Anonymous	Moses Maimonides, <i>Commentary on Hippocrates 'Aphorisms'</i> (3)	Arabic	(פירוש לפרקי אבוקרט)
21	1308	Qalonymos ben Qalonymos Provence	<i>Treatise on Phlebotomy</i>	Arabic Arabic translation by Istafan Ibn Basil and 'Isa Ibn Yahya	ספר תכלית השימוש

Translations into Hebrew from Galenic and pseudo-Galenic treatises, epitomes, and adaptations (*cont.*)

	Date	Hebrew translator and place	Galenic text	Language(s) of translated text	Hebrew title
22	1322	Shimshon ben Shlomo Provence[?]	<i>Alexandrian Compendia of Galen's Sixteen Works</i>	Arabic Arabic translation by Ḥunayn ibn Ishāq	ספר קיצורים לאלכסדריים
23	Before 1337	David ben Abraham Caslari Provence (Narbonne or Montpellier)	<i>On the Anomalous Dyskrasia</i>	Latin Latin translation by Gerard of Cremona	ספר רוע מזג מתחלף
pseudo-Galenic Texts					
24	1197–99	Do'eg the Edomite	<i>Book on the Womb, which is called Gynaecia (De passionibus mulierum B)</i>	Latin	ספר האם אל גלינוס הוא הנקרא גיניאס
25	1197–99	Do'eg the Edomite	<i>Passionarius Galieni (Gariopontus)</i>	Latin	ספר המדוים אל גאלינוס הוא הנקרא פשיאונרי
26	c. 1200[?]	Judah al-Ḥarizi Provence[?]	<i>Book on the Ban of Burying, Compendium by Abū Sayyid Ubaydallah</i>	Arabic	ספר איסור הקברות לגלינוס קיצור ישוע האשורי
27	c. 1200	Judah al-Ḥarizi Provence[?]	<i>De anima (On the Soul)</i>	Arabic	ספר הנפש
28	c. 1277–90	Zeraḥiah Ḥen Italy (Rome)	<i>Book on Diseases and their Symptoms</i>	Arabic From the Arabic translation of Ḥunayn ibn Ishāq	ספר החלאים והמקרים

Translations into Hebrew from Galenic and pseudo-Galenic treatises, epitomes, and adaptations (*cont.*)

	Date	Hebrew translator and place	Galenic text	Language(s) of translated text	Hebrew title
29	c. 1277–90	Zeraḥiah Ḥen Italy (Rome)	<i>On the Regimen of Health</i>	Arabic From the Arabic translation of Ḥunayn ibn Ishāq	ספר ההנהגה לגלינוס
30	1308	Qalonymos ben Qalonymos Provence	<i>Book on Clyster and Colic</i>	Arabic Arabic translation by Ḥunayn ibn Ishāq	בחקנא ובקולנג
31	14th century [?]	Anonymous	<i>On Melancholy</i>	Arabic Arabic compendium by Istafan Ibn Basil ([?])	כללי ספר גלינוס במרה השחורה
32	c. 1392–1402	Leon Joseph of Carcassonne Provence (Carcassonne)	<i>On Prognosis Based on the Hour When a Patient Goes to Bed Based on the Science of Astrology</i> (Equivalent to pseudo-Hippocrates <i>De esse aegrotorum secundum lunam</i>)	Latin (or Arabic[?])	(האבחנה) הרפואית לפי מקום המבנה)
33	1406	Tanḥum ben Moses of Beaucaire Italy (Castle Durante)	<i>On Prognosis Based on the Hour When a Patient Goes to Bed Based on the Science of Astrology</i>	Latin	פנים לפנים

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The Reception of Galen in the Armenian Tradition (Fifth–Seventeenth Centuries)

Alessandro Orengo

with contributions by Irene Tinti

1 Medicine among the Armenians¹

In the pre-Christian period, the Armenian pantheon included deities associated with the treatment of certain diseases. Thus, in asking for healing, people sent emissaries to the temple of the goddess Anahit, in the village of Erēz (today's Erzincan, Turkey). In addition, several sources mention the Aralēz or Aflēz, beings who by licking the wounds of warriors killed in battle brought them back to life. This belief persisted even after the kingdom officially adopted Christianity as its official religion at the beginning of the fourth century AD.²

After Armenia's Christianisation, according to the extant sources (none of which is contemporary to the events), the church became actively involved in providing medical care. In this regard, Patriarch Nersēs (d. AD 373) is said to have sponsored the construction of hospitals and hospices; it remains unclear whether these were actual places of treatment or simply shelters for the sick and the poor. Furthermore, the Canons of the Council of Šahapivan (444

1 For a general overview of the history of Armenian medicine, cf. the monumental work by Leon A. Oganēsian (also known as Levon A. Hovhannisyan) in Russian, the first three volumes of which (Oganēsian 1946–7, vols. I–III) cover the relevant time frame. See also Vardanyan (1999b), a somewhat hasty but still informative French version of Vardanyan (2000). Armenian words and names are transliterated throughout this chapter following the Hübschmann-Meillet-Benveniste (HMB) system used in *Revue des Études Arméniennes*, with the exception of the digraph <nt>, which is always rendered as <ow>. When authors of Armenian origin have adopted specific transliterations for their own surnames in publications in foreign languages, we have generally retained the spelling they chose; however, when several publications by the same author are referred to, some of which are in Armenian, we have generalised the HMB transliteration of the surname, and given the spelling adopted in each publication in brackets in the bibliography.

2 The official conversion is traditionally placed in AD 301, but it is more likely that it actually took place in AD 314.

or 447) attest to the existence of leper houses. Caring for lepers was one of the penalties imposed on persons found guilty of certain offences.³

More substantial information on Armenian medicine can be found after the beginning of the fifth century, when the Armenians invented an alphabet for writing their language. Their literary tradition began with translations of Greek and Syriac works of religious content, but was soon enriched with original texts as well. Fifth-century texts often contain some medical knowledge. For instance, several authors mention the theories of the four qualities (hot, cold, dry, and moist) associated with the four humours (blood, phlegm, yellow bile, and black bile). Both are invoked to explain various ailments in one of the earliest original Armenian works, *Etc atandoc' (Confutation of the Sects)*, the theological treatise by Eznik Kolbac'i dating to the 440s. The text also includes notions of pharmacopoeia – concerning the use of medicinal herbs and of theriac as an antidote – and a theorisation of the psychological causes of dreams.⁴ Similar notions can also be found in coeval works.

2 References to Galen in Non-Medical Texts

To the best of our knowledge, no exhaustive inventory of references to Galen – or to works attributed (rightly or wrongly) to him – in Ancient and Middle Armenian literature has ever been compiled, although studies devoted to his presence in the work of specific authors do exist. Filling in this gap would require a comprehensive study of numerous texts, most of which do not exist in digital form, and some of which are not critically edited according to modern scholarly standards. Thus, the purpose here is to more feasibly contribute to the existing corpus by presenting additional references to Galen detected in a few Armenian works chiefly, but not exclusively, of medical interest.

Based on a survey of non-medical texts, Galen's name seems to be attested rather late in original (i.e. non-translated) Armenian works. To the best of our knowledge, the earliest known references are found in the tenth century, in a theological treatise against the Dyophysites by Anania Narekac'i,⁵ which has been preserved within a similar work by Anania Sanahnec'i from the eleventh

3 For further information on these topics, cf. Oganessian (1946–7); Vardanyan (1999b); Orengo (2007a).

4 Orengo (2007b).

5 Anania Narekac'i, *Settlement of the Dispute with the Dyophysites (Lowcowmn mak'arman erk-abnakac')*, 788, ed. Tamrazean (2009) 538.

century.⁶ The text contains a brief passage attributed to Galinos in which the author addresses a Glawkos (perhaps Glaucon?), stating that the art of medicine, which constitutes an immense field of inquiry, has been given to mankind by the first cause as a remedy against the physical corruption that destroys the body.⁷

In the following century, Gaġianos is mentioned in the epistolary of Grigor Magistros (c. 990–1058), a nobleman, versatile scholar, and prolific author who knew Greek and occasionally addressed medical matters.⁸ In the relevant text, he advises his correspondent, the Greek cleric (*dpir*) Kirakos, to read, among other things, a text by Galen, probably in the original Greek.⁹ Then, in the twelfth century, Galen (Galianos) appears as the protagonist in a few stories in *Arakk'* (*Fables*) by Mxit'ar Goš (d. 1213). The narrative structure is always the same: first Galen praises the healing properties of a certain substance (e.g. poppy as a remedy against insomnia,¹⁰ or garlic¹¹), or the therapeutic effects of a certain behaviour (e.g. dieting¹²), and then a dullard takes too much of the substance, or overdoes the practice, and comes to grief because of it.¹³

Although Galen's name seems to be attested rather late in original texts, that is not the case with translated literature. Indeed, the adjectival *galinayink'* ('Galenic [texts]') is used in a work by Dawit' Anyalt' (lit. 'The Invincible'), the *Verlowcowt'iwn Neracowt'eann Porp'iwri* (*Commentary on Porphyry's Isagoge*),¹⁴ which was probably translated in the sixth century. Later, the name appears several times, either as Gaġianos or Gaġinos, in *Yatags bnowt'ean mardoy* (*On Human Nature*), the Armenian version of *On the Nature of Man* by Nemesios of Emesa, which dates to the early eighth century.¹⁵

As is immediately apparent, several variants of the physician's name – notably Gaġianos, Gaġinos, and Galinos – are attested in Armenian. At least in

6 For the passage in Anania Sanahnec'i, see K'yoseyan (2000: 263). For another, brief reference to Galen in Anania Sanahnec'i, cf. K'yoseyan (2000: 184).

7 This definition of the art of medicine seems to have found favour with the Armenians, since it is also attested in two works attributed to Dawit' Anyalt': cf. Mowradean (2014: 676, 728).

8 Vardanyan (1999b: 78–84).

9 Grigor Magistros, *Epistle* 60, 15, ed. Mowradean (2012) 346–7.

10 Mxit'ar Goš, *Fables (Arakk')*, 49, ed. Piwazeian (2014) 63.

11 Mxit'ar Goš, *Fables (Arakk')*, 53, ed. Piwazeian (2014) 64.

12 Mxit'ar Goš, *Fables (Arakk')*, 174, ed. Piwazeian (2014) 100.

13 On the presence of Galen in Mxit'ar's fables, cf. Greppin (1990).

14 Dawit' Anyalt', *Commentary on Porphyry's "Isagoge"* (*Verlowcowt'iwn Neracowt'eann Porp'iwri*), 6.4, ed. Mowradean (2015) 102.

15 Cf. Nemesios, *On Human Nature (Yatags bnowt'ean mardoy)*, 2, 50, 7, 13, 21, 25, ed. Tiroyeian (1889) 34 and 50, 72, 85, 100, 105.

some cases, these variations possibly originated during the process of textual transmission, rather than reflecting a deliberate choice on the authors' part. In any case, Galianos seems to be the most frequently used form, although Galinos and Galinos both reproduce more faithfully the Greek name in its itacistic pronunciation.

3 References to Galen in Medical Texts¹⁶

Although the Armenian literary tradition began with translations of religious texts, secular texts were soon being translated as well, with the intent of instructing Armenians in the subjects of the trivium and quadrivium. The latter translations, adopting different degrees of literalness, are usually attributed to the so-called Yownaban dproc' ('Hellenising School'), whose dating is disputed (sixth–eighth century?). Later, in a different place and social milieu – the Armenian Kingdom of Cilicia at the time of the Crusades (eleventh–fourteenth centuries) – several scientific texts were translated (e.g. treatises about agriculture, equine medicine, and so on), and the first original texts specifically devoted to medicine were written (e.g. the work of Mxit'ar Herac'i).

It has been argued, and often repeated in the scholarly literature, that one or more Galenic works were translated into Armenian between the sixth and eighth centuries.¹⁷ However, no Armenian text associated with Galen's name is known to have appeared in print from the 1800s onwards. Therefore, if such versions actually existed at some point, and are still extant, they are as yet unpublished by scholars.¹⁸ A few texts attributed to Galen (or ĵalinos) were printed between the 1500s and 1700s, but these are probably spurious texts whose impact on recent scholarship has been negligible. As for works published in the last two centuries, the only one explicitly attributed to Galen is a pharmacological lexicon.¹⁹ In addition, Basmaĵean described a manuscript containing what seems to be a text of popular medicine, attributed to ĵalinos, albeit without publishing its contents.²⁰

Texts attributed to Galen are preserved in several Armenian manuscripts. Since they have never been published, however, it is impossible to ascertain

16 On the subject cf. also Vardanyan (1993).

17 Oĵanesĵan (1946: I.174–6).

18 In theory, the work of Galen might have been known directly at first, and then through the mediation of Arab physicians (Boudon-Millot 2007: CLXVII–CLXVIII); however, this is at present merely a hypothesis.

19 See Section 4 below.

20 Basmaĵean (1930).

whether these are actual translations of Galenic works or texts falsely ascribed to him, as the medical authority *par excellence*. To give just one example, Ms. 266²¹ – a miscellaneous manuscript kept at the Matenadaran, in Yerevan, dating to 1468 and copied by the physician Amirdovlat' Amasiac'i – contains several writings attributed to Galen, whose name appears in different forms (Gelianos, Galianos, Čalinos/Čalanios). To Čalinos/Čalanios is ascribed a text of about seven pages devoted to the signs that indicate that a patient is healing.²² Ms. 266 also contains the *Barġ' Galianosi* (*Galenic Dictionary*),²³ as well as two pages of not better identified Galenic sayings. It would be easy to dismiss all such texts as spurious, but some ancient translations or excerpts from Galen's work may have actually been preserved among the many references to the physician in Armenian manuscripts. Further research is needed, however, to substantiate this hypothesis.

Although there is no definitive evidence of the existence of Armenian translations of Galenic writings, several references to his works and ideas (not all of them genuine) can be found in the Armenian medical literature of the Middle Ages. Once again, it is difficult to ascertain whether these references derive from ancient translations or from simple quotations in other authors' works, either in Armenian or other languages, including the original Greek. The writings of Abowsayid, Mxit'ar Herac'i, and Amirdovlat' Amasiac'i, three prominent Armenian physicians from the Middle Ages, offer examples of such Galenic references.

3.1 *Abowsayid*

Abowsayid was a Syriac Christian who lived in the twelfth century. His anatomical treatise, *Yalags kazmowt'ean mardoyñ* (*On the Constitution of the Human Being*),²⁴ has survived only in Armenian. It has been suggested that the extant text may actually be identified with a similar and otherwise lost work traditionally attributed to Nersēs Lambronac'i (1153–98).²⁵ According to this hypothesis, Nersēs translated Abowsayid's work from Syriac into Armenian or possibly transcribed in Armenian instructions given to him orally by Abowsayid himself. The treatise couples some traditional elements – namely, a theological

21 For a description of the manuscript, cf. Eganyan, Zeyt'ownyan, and Ant'abyan (1984: 1111–8); for its medical contents, cf. Vardanyan (1999b: 47; 1999c: 200).

22 This is possibly one of the texts of popular medicine linked to the name of the Greek physician: see Section 5 below.

23 This is one of the witnesses used by Greppin (1985) in his edition of the text: cf. below.

24 For an edition of the three redactions of the Armenian text, and a Russian translation, cf. Vardanyan (1974). On Abowsayid, cf. also Mahé (2006).

25 Cf., for example, Vardanyan (1999b: 115) and Mahé (2006: 1837–8).

background and astrological references – with a new interest in anatomical observation. Three redactions survive: a longer version (close to the original), a shorter version, and a new edition revised and augmented by the physician Asar Sebastac'i around 1617. This last redaction seems to be the one translated by Frederick C. Conybeare.²⁶

The treatise explicitly refers to Galen (usually as Galianos) on several occasions. In the longer redaction, he is listed among the great authors of medical writings,²⁷ and a comparison between the structure of the human body and a city is ascribed to him.²⁸ The text also cites him as a source while describing the structure of the head,²⁹ listing the principal organs of the body,³⁰ and addressing the structure of the intestines.³¹ All these references – minus the first and last one, which were included in chapters missing from the epitome – are also present in the shorter version.³² Asar in turn keeps all the references and even adds to them.³³ Indeed, in a new, long section devoted to the eye, he refers to an otherwise lost treatise on ophthalmology by Mxit'ar Herac'i. In this section, Galen is cited three times (as Galianos or Galianos), with reference to the structure of the eye.³⁴

3.2 *Mxit'ar Herac'i*

Mxit'ar Herac'i, considered the founder of the medical school in Cilicia, was the greatest medical authority of the Armenian-speaking world in the twelfth century. Of his many works, only the treatise *Ĵermanc' mxit'arowt'iwn* (*Consolation of the Fevers*) has reached us. Only one, non-critical edition of the Armenian

26 Conybeare (1921: 367–82, §§ 1–20).

27 Abowsayid, *On the Constitution of the Human Being* (*Yatags kazmowt'ean mardoyñ*), ed. Vardanyan (1974) 116. Here and elsewhere, we provide references to the Armenian text. The relevant pages in the Russian translation (Vardanyan, 1974) are: 59, 60, 61, 71, 72 (longer redaction); 78, 79, 84 (shorter redaction); 87 (x 2), 89, 102, 103 (Asar's redaction).

28 Abowsayid, *On the Constitution of the Human Being* (*Yatags kazmowt'ean mardoyñ*), ed. Vardanyan (1974) 118.

29 Abowsayid, *On the Constitution of the Human Being* (*Yatags kazmowt'ean mardoyñ*), ed. Vardanyan (1974) 121.

30 Abowsayid, *On the Constitution of the Human Being* (*Yatags kazmowt'ean mardoyñ*), ed. Vardanyan (1974) 141.

31 Abowsayid, *On the Constitution of the Human Being* (*Yatags kazmowt'ean mardoyñ*), ed. Vardanyan (1974) 143.

32 Abowsayid, *On the Constitution of the Human Being* (*Yatags kazmowt'ean mardoyñ*), ed. Vardanyan (1974) 154, 156, 165.

33 Abowsayid, *On the Constitution of the Human Being* (*Yatags kazmowt'ean mardoyñ*), ed. Vardanyan (1974) 170, 171, 174, 207, 209.

34 Abowsayid, *On the Constitution of the Human Being* (*Yatags kazmowt'ean mardoyñ*), ed. Vardanyan (1974) 179, 183.

text, printed in Venice in 1832, is available at present.³⁵ A German translation with an extensive and useful commentary also exists.³⁶

The title of the treatise is probably a play on the author's name, since Mxit'ar ('The Consoler') is offering a *mxit'arowt'iwn* ('consolation'). Be that as it may, Mxit'ar himself, in the introduction, explains the reasons behind his choice of a title: he wishes for his work to console the physician, by educating him, and the patient, by healing him, with the help of God, his Creator. He also informs the reader that he has studied the works of Arab, Persian, and Greek physicians and has found them much superior to those written by Armenians, since the latter merely give a few suggestions concerning the best treatment to follow in each case. Therefore, prompted by Patriarch Grigor Tlay ('The Boy'), he has composed the treatise (completed in 1184), incorporating the knowledge he has gathered from foreign works. He declares to have written it in the vulgar Armenian tongue, so that any reader can benefit from it.

The subject of the book was not chosen at random. Fever is more common than other afflictions and can in itself cause several pathologies. Furthermore, whereas other illnesses usually affect one or a few organs, the symptoms of a fever can affect the whole body. As for the causes, according to Mxit'ar, they can be external (for instance, due to the weather, the wrong diet, or bathing in particular waters, such as sulphur waters) or internal (such as concerns, fears, mourning, or even intense desires). As for the types of fever, Mxit'ar distinguishes between acute and chronic, intermittent and non-intermittent (i.e. with or without moments of crisis), due to some kind of mould (*borbos*) or otherwise. In his opinion, the four humours of the human body – blood, phlegm, yellow bile, and black bile – can all become mouldy and thus cause fevers. Such mould would be caused by external agents.

Being a self-proclaimed disciple of Greek physicians, among others, Mxit'ar naturally refers to Galen (Galianos in all cases but one) on several occasions. The relevant passages are as follows:

Chapter 2 compares the relation of the body and the four humours with a cold vessel, which gets warmer if hot water is poured into it, and a hot vessel, which warms up the cold water poured into it; states that likewise, if the humours or body overheat, they warm the rest as well,³⁷

35 Cf. Mxit'ar Herac'i (1832).

36 Seidel (1908). For further information on Mxit'ar, see the general works on Armenian medicine listed above, as well as Ktsoyan (1969).

37 Mxit'ar Herac'i, *Consolation of the Fevers* (*Ĵermanc' mxit'arowt'iwn*) (1832) 4 = ed. Seidel (1908) 9.

Chapter 6 states that if the body becomes colder for any reason, its internal balance is altered; lists symptoms of this alteration;³⁸

Chapter 7 cites causes of monohemorous fevers;³⁹

Chapter 25 claims that black bile in the veins cannot become altered (i.e. mouldy) and thus cause continuous fevers;⁴⁰

Chapter 26 notes the alteration of the veins when the disease reaches its climax;⁴¹

Chapter 34 cites the importance of and ways for the patient to regain strength;⁴²

Chapter 40 recommends a curative amulet made with peony be tied to a patient's arm or neck;⁴³

Chapter 40 discusses the alteration (i.e. becoming mouldy) of the black bile; Galen is here called Gaġenos;⁴⁴

Chapter 41 describes how to inspect the body in cases of fever due to the black bile;⁴⁵

Chapter 46 presents the three stages of healing;⁴⁶

Chapter 46 notes features of acute and chronic illnesses.⁴⁷

The reference in chapter 2 is especially relevant, not so much for its contents, as for the way in which it is introduced into the Armenian text. Its source has been identified as a passage from Galen's *On the Different Kinds of Fevers*.⁴⁸

38 Mxit'ar Herac'i, *Consolation of the Fevers* (Ĵermanc' mxit'arowt'iwn) (1832) 10–11 = ed. Seidel (1908) 13.

39 Mxit'ar Herac'i, *Consolation of the Fevers* (Ĵermanc' mxit'arowt'iwn) (1832) 13–14 = ed. Seidel (1908) 15.

40 Mxit'ar Herac'i, *Consolation of the Fevers* (Ĵermanc' mxit'arowt'iwn) (1832) 63 = ed. Seidel (1908) 49.

41 Mxit'ar Herac'i, *Consolation of the Fevers* (Ĵermanc' mxit'arowt'iwn) (1832) 66 = ed. Seidel (1908) 51.

42 Mxit'ar Herac'i, *Consolation of the Fevers* (Ĵermanc' mxit'arowt'iwn) (1832) 99 = ed. Seidel (1908) 73.

43 Mxit'ar Herac'i, *Consolation of the Fevers* (Ĵermanc' mxit'arowt'iwn) (1832) 120 = ed. Seidel (1908) 87.

44 Mxit'ar Herac'i, *Consolation of the Fevers* (Ĵermanc' mxit'arowt'iwn) (1832) 122 = ed. Seidel (1908) 88.

45 Mxit'ar Herac'i, *Consolation of the Fevers* (Ĵermanc' mxit'arowt'iwn) (1832) 124 = ed. Seidel (1908) 90.

46 Mxit'ar Herac'i, *Consolation of the Fevers* (Ĵermanc' mxit'arowt'iwn) (1832) 137 = ed. Seidel (1908) 98.

47 Mxit'ar Herac'i, *Consolation of the Fevers* (Ĵermanc' mxit'arowt'iwn) (1832) 140 = ed. Seidel (1908) 100.

48 Galen, *Dif. Feb.*, I.1, ed. Kühn (1824) VII.276.

Mxit'ar, however, states that he is quoting from Galen's book on the three types of fever, notably from the first *makalat'* ('speech'), a word that he promptly renders into Armenian as *čar*. *Makalat'*/*magalat'* is actually the Armenian adaptation of an Arabic word. It was probably not common in Armenian, since Mxit'ar feels the need to juxtapose a more current term to it, but may have been present in his source. This might suggest that he was not quoting directly from the Greek text, but rather from a translation, likely in an oriental language.

3.3 *Vivisection*

Armenian physicians operating in Cilicia paid special attention to the structure of the human body. One might legitimately wonder whether their penchant for direct experience also involved dissecting bodies for anatomic purposes or even vivisection. Some sources seem to suggest that it did.

In the works of later authors, including Yovhannēs Erznkac'i and Vahram Rabowni (thirteenth century), clear references to the practice of vivisection for anatomic purposes can be found. According to Erznkac'i's *Homily on Psalm 107*,⁴⁹ for instance, a clever and wise physician should take a man sentenced to death and kill him in several ways, with different torments and incisions, until he finds the structure of all the articulations, nerves, veins, and innards. Thus, through the suffering of one person, he will be able to help many.

This testimony, together with others of similar content, has often been cited as irrefutable proof that vivisection was indeed practised in Armenia. Objections, however, have also been raised. For instance, none of these texts explicitly refers to Armenia. Furthermore, these passages could reflect written sources – such as Gregory of Nyssa or Galen's *On the Anatomy of Corpses* (*De Anatomia Mortuorum*), which might survive in an Arabic translation⁵⁰ – rather than contemporary practices. Be that as it may, the idea of vivisection does not seem to have scandalised some authors, including Yovhannēs Erznkac'i. Thus, practised or not, vivisection clearly was not beyond the mindset of the time. It is worth recalling that a similar attitude in the Byzantine world is documented in texts from the fourth to the twelfth century.⁵¹

49 Yovhannēs Erznkac'i, *Homily on Psalm 107*.15.14, ed. Ter-Srapyan and Baldasarjan (2013) 342. In Armenian, the full title of the homily is: *I ĆĖ satmosn 'Xostovan elerowk' Teān, zi k'alc'r ē' (On Psalm 107: Give Thanks to the Lord, for He is Good)*.

50 On the same topic, see Vardanyan (1999b: 48–50; 1999c: 201–2); Orenco (2007a: 166–8). For the Arabic version of *On the Anatomy of Corpses*, see Ormos (1993). A similar notion can be found in the proem to Celsus' *On Medicine*, 23–6, ed. Marx (1915) 21.12–32.

51 Cf. Bliquez and Kazhdan (1984).

3.4 *Amirdovlat' Amasiac'i*

Amirdovlat' (or Amirtovlat') Amasiac'i, the copyist of Ms. 266 of the Matenadaran, which contains a few texts attributed to Galen, was the most prominent Armenian physician of the fifteenth century. He was born in Amasia, possibly in the 1420s or the early 1430s. In the 1450s he was a student in Constantinople, where, in 1459, he wrote his first work. He then became a physician at the court of Mehmed II (r. 1451–81), who had recently conquered the Byzantine capital. Amirdovlat' later fell into disgrace and was forced to leave for the Balkans. While in Philippopolis (today's Plovdiv, Bulgaria) between 1466 and 1469, he wrote, among other things, *Ōgowt bžškowt'ean* (*Useful for [Practising] Medicine*, or *The Benefits of Medicine*), a treatise on anatomy, physiology, and pathology. In the 1470s, back in Constantinople and at court, he continued writing, and between 1478 and 1482 he composed his most important work, *Angitac' anpēt* (*Useless to Ignorants*), a sort of pharmacological encyclopaedia. He later went back to Amasia, then on to Brusa, and eventually died in one of these two towns on 8 December 1496.⁵²

Angitac' anpēt, which would be published by Basmaĵean in 1927,⁵³ was written in vulgar Armenian and chiefly aimed at medical students. After the introduction, it contains an alphabetical description of numerous substances of vegetable and to a lesser extent animal and mineral origin. Basmaĵean's edition contains 3,754 entries, divided into thirty-six chapters (one for each letter of the Armenian alphabet).⁵⁴ Some of the headwords are actually synonyms, and in these cases there are cross references. In general, however, each entry consists of the headword itself (occasionally with its equivalents in other languages), followed by a description of the properties and uses of the substance, and if the latter is of vegetable origin, the morphology of the plant and its geographical distribution.

The *Angitac' anpēt* contains more than fifty mentions of Galen, usually abbreviated *Gs* or, much more rarely, *Gtns*. His full name appears as *Gelianos* or, more rarely, *Gaĵianos*. It is usually found in brief references whose purpose is to identify single substances or their properties. A couple of them are, however, more substantial. In section 556, devoted to the viper,⁵⁵ Galen himself

52 On his life and work, see Gueriguian (1987); Vardanyan (1999a); Gurunluoglu, Gurunluoglu and Hakobyan (forthcoming).

53 See Basmaĵean (1927). For a Russian translation of this text, see Vardanyan (1990).

54 At the time, the Armenian alphabet actually included 38 letters; however, <w> is never used at the beginning of a word, and <ō> is regularly substituted here with its etymological equivalent, the digraph <aw>.

55 Amirdovlat' Amasiac'i, *Useless to Ignorants* (*Angitac' anpēt*), ed. Basmaĵean (1927) 100. The headword is *afyi*, adapted from Arabic, but its meaning is immediately clarified through Armenian *k'arb*, lit. 'asp': cf. Vardanyan (1990: 85, § 354).

relates that in his country, a rich man affected by elephantiasis (*godowt'wn*) had had a dream in which God had ordered him to cut the head and tail off a viper (*awj*), cook it with salt, oil, leeks, and water, and consume it all. The man followed these instructions and was healed. The narrative framework of the dream aside, the same recipe, for the same therapeutic purpose, can be found in Galen's *Therapeutics to Glaucon*.⁵⁶

Section 647 is devoted to Lemnian earth, or sealed earth.⁵⁷ At the beginning, it says that Galen, in his ninth book (*yir girk'n i T' hamar*), states that this substance is called Lemnian earth. It is marked with a seal representing the goddess Artemis. One can obtain the substance by immersing it in water, letting the stones and sand set, and then retrieving the upper layer, which, once dried, has the same texture as wax. This should then be divided into small spherical pieces and left to dry further in the shade. Galen had read in Dioscorides, however, that goat blood must be mixed in with the earth. Thus, he sets off for Lemnos to learn the exact proportions.

Galen's travels are described, including the distances between different stops in his journey. Once on the island, Galen witnesses a rite celebrated on the hill where the earth is gathered and then watches the latter being brought into town. His inquiries about goat blood elicit laughter, but he is also given an old book that deals with sealed earth. The person who gave it to him had often used the substance to treat wounds, as well as snake and wild animal bites. Galen also learns that the earth, taken before or after a poisonous substance, can serve as an antidote, since it has emetic properties. Mixed with wine, it forms as a potion for the treatment of bites by rabid dogs, and, mixed with strong vinegar, it forms an ointment to apply in case of dog bites. Other mixtures are also listed.

Most of the contents of this entry – including the references to the ninth book and to Dioscorides and even the distances between different stops in Galen's journey – can be found in Galen's *On the Capacities of Simple Drugs*.⁵⁸ A few of the toponyms are altered in the Armenian text, but that in itself is hardly surprising. In any case, based on other additions and omissions, as well as on the displacement of some data, it may be argued that Amirdovlat' was

56 Galen, *Therapeutics to Glaucon*, 2.12, ed. Kühn (1826) XI.143–4.

57 Amirdovlat' Amasiac'i, *Useless to Ignorants* (*Angitac' anpēt*), ed. Basmajean (1927) 122–7, esp. 122–5. The headword is *dini maxtown*, also adapted from Arabic, and explained as *matnēhar kaw*, lit. 'sealed clay': cf. Vardanyan (1990: 103–6, § 440). The long passage also contains other names for the substance.

58 Galen, *SMT*, 9.2, ed. Kühn (1826) XII.168–78.

not using Galen's text directly, but through an intermediate source (possibly an Arabic translation).⁵⁹

4 The *Bark' Galianosi* (Galenic Dictionary)

Despite Galen's reputation in the Armenian tradition, the only known Armenian work published in the last two centuries associated, rightly or wrongly, with his name is a dictionary, *Bark' Galianosi bžškapeti* (*Words of the Chief Physician Galen*). Written entirely in the Armenian alphabet, the dictionary lists Greek and, more rarely, Arabic words, followed by an Armenian gloss. The work has been preserved in numerous manuscripts, the most recent of which date to the eighteenth century. It has been edited and published only once, by John Greppin,⁶⁰ if one discounts the three pages (573–5) titled *Bark' Galianosi*, published as an appendix to the *Bargirk' Hayoc' (Armenian Dictionary)* compiled by Eremia Melrec'i and printed in Constantinople in 1728. Greppin collated twenty-four manuscripts and collected some 575 entries (no manuscript lists them all) in his edition. Around 400 of the headwords are clearly of Greek origin, while approximately fifty are of Arabic origin. The remaining headwords have been preserved in such a form that their origin can no longer be clearly identified. The entries chiefly concern elements of pharmaceutical interest (e.g. names of plants used as simples), but names of body parts are also cited. In addition, the dictionary lists names of animals (especially birds) that do not seem to have any clear link to medicine.

The work has reached us in two redactions: one of them, attested by the majority of surviving manuscripts, lists the headwords in alphabetical order, considering the first two letters of each word; the other arranges them on the basis of the first letter alone. According to the editor, however, there is reason to believe that neither redaction reflects the original structure of the dictionary, which might have grouped the entries into thematic sections. Starting from this original disposition, which at present is no longer attested in any manuscript, the entries might have been arranged at first on the basis of the initial letter and then alphabetically on the basis of the first two letters.⁶¹ Alternatively, the two arrangements currently attested might have developed at the same time, as rearrangements of the original text.⁶² The latter hypothesis is supported by

59 Cf. Vardanyan (1993: 201–3).

60 See Greppin (1985).

61 Greppin (1982).

62 Greppin (1985).

the presence of the alphabetical arrangement based on the first two letters in the earliest extant manuscript, Ms. 4149, from the Matenadaran, which dates to 1304–5.

Greppin himself, however, more recently proposed a partially different reconstruction: the original text as an alphabetical list of Greek headwords, written in the Greek alphabet and accompanied by Armenian glosses.⁶³ Later, the Greek words would have been transliterated into the Armenian alphabet and arranged according to their initial letter. Still later, they would have been arranged according to their first two letters. Be that as it may, we should add that this last layout must date to the beginning of the fourteenth century at the latest, since Ms. 4149 provides a *terminus ante quem* for it.

The dictionary contains several layers of materials, which is hardly surprising, since a work such as this easily lends itself to successive integrations at the hands of copyists and readers alike. There is a layer, probably the most ancient one, of Greek vocabulary of medical and pharmaceutical interest whose original orthography is often heavily altered. There is also a group of Arabic headwords, less numerous, less altered in their orthography than the Greek words and thus, probably, more recent, that were likely added to the dictionary after the end of the ninth century. As a mere hypothesis, one might consider as a possible source for them the *Materia Medica*, the second book of Ibn Sīnā's *Canon of Medicine*,⁶⁴ which lists about 800 substances of medical interest.

Another group of words includes about thirty Greek bird names, whose form is not significantly altered. They may represent an addition to the original Greek vocabulary of medical and pharmaceutical relevance.⁶⁵ According to Greppin,⁶⁶ the source of these headwords could be the *Kyranides* – a compilatory Greek work dealing with the magical and therapeutic properties of stones, plants, and animals – whose exact dating is disputed (first–fourth century AD).

Dating the original group of Greek terms, and therefore the dictionary itself, is no easy task. A general time frame from the sixth to the tenth century has been proposed,⁶⁷ which possibly can be further narrowed to between the seventh and ninth centuries.⁶⁸ The supporters of an early date consider the dictionary to be the product of the Hellenising School. This hypothesis is not necessarily disproved by the presence, in nine instances, of Arabic loanwords as glosses for Greek terms. Although, for historical reasons, the loanwords

63 Greppin (2001).

64 Cf. Greppin (1986–7).

65 Greppin (1988).

66 Greppin (2001).

67 Greppin (1982; 1985; 1986a; 1986b).

68 Greppin (2001).

themselves must be later than the sixth century, it is possible that the headwords that include them were not part of the original dictionary.⁶⁹ On the other hand, there is no compelling evidence in favour of an early date either. The issue, therefore, remains unresolved.

Many of the Greek headwords of medical and pharmaceutical interest are found in the Galenic corpus, especially *On the Capacities of Simple Drugs*. Thus, this work might have provided a starting point for the original compiler of the dictionary. As for the latter's purposes, it may have originally served as a reading aid, meant to make Galen's Greek text more easily accessible to the Armenian reader and to help Armenian physicians identify specific remedies. Once Arabic manuals took the place of Greek ones in Armenian milieux, this immediately practical purpose would have been lost.

5 Դժնոս Իակոբ

Among Armenian works published before the 1800s are a few brief writings attributed to Galen. One of these in particular appeared in print at the beginning of Armenian typographical activity, thanks to one Yakob Melapart ('Jacob the Sinner'), who arrived in Venice at the beginning of the sixteenth century to acquire printing equipment and produced at least five Armenian books, around 1513. The history of Armenian printing actually begins with him.

Taking into account the contents of the books attributed to him on the basis of an identical typographical mark,⁷⁰ the reasons behind his enterprise, as well as his target audience, are easy to determine. Since Armenians often had to live in areas where warfare and devastation were widespread, there was a general lack of Armenian manuscripts, and the survival of the extant ones was threatened. Therefore, Yakob must have decided to avail himself of a new technological invention, the printing press.

Among the five printed books attributed to Yakob, one, a Missal (*Pataragatetr*) for the Armenian Apostolic Church, was obviously printed for religious purposes. Another one, *Owrbat'agirk'* (*The Book of Friday*), is a collection of exorcisms and spells. Since not all of the spells require the involvement of a priest, religious men must not have been the only intended readers. Indeed, most of these are homemade spells to be used by anyone who could access the text and read it. The remaining three books were also not explicitly meant for clerics: *Att'ark'* (*Horoscopes*), a collection of short texts dealing with astronomy, astrology, and practical medicine; *Parzaytowmar*, a simplified calendar, containing

69 Greppin (1986a).

70 The printer's name appears only in one of the books, the *Pataragatetr*.

instructions on how to predict the weather and pick the right day for certain activities; and *Talaran*, a collection of poems. These last three works were almost certainly intended for a mercantile audience, thus people who could read and had specialised knowledge and skills but were by no means erudite.

It is in the *Alt'ark'* that a long section of more than a hundred pages, attributed in the title to Čalalios Hak'im (Ĵalalios the physician'),⁷¹ can be found. The physician becomes Čalinos (Ĵalinos) Hak'im in the text itself, but the name Galianos/Galinos is also attested. The relevant part of the book includes recipes and other medical or pseudo-medical contents. The language contains many Arabic, Persian, and Turkish loanwords – also reflected in the name and title of the alleged author – and thus seems to suggest an oriental origin for the text, whose exact relation to Galen remains quite vague.⁷² Nevertheless, no matter where the contents of the book actually originated, Galen's name was clearly a guarantee of quality in itself, attesting to his persisting fame, at least among some Armenians, even at this time.

The same reason may explain the appearance of Galen's name (as Galianos) in a section of seventeen pages at the end of a book published in 1675 in Marseille, *Girg* [sic] *aybowbenic' Ew kerp owsaneloy zlezown italakan očiw K'erakanowt'ean. Aylew kanonk' omank' astetabašxakank' vasn pahpaneloy zarołjowt'iwn marmnoy* (*Book of the Alphabet and Ways to Learn the Italian Tongue According to [the Rules of] Grammar, and in addition Some Astronomical Rules to Preserve Bodily Health*). As may be surmised from the title, this book was also intended for a mercantile audience, namely, people interested in learning a smattering of Italian, which is written here in the Armenian alphabet, but even more in staying healthy. To that end, once again, Galen's name serves as a guarantee, even if the section actually deals with astrology.

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71 In different written varieties of Armenian, <č> alternates with <ĵ>.

72 On this section of the *Alt'ark'*, see Seidel (1911).

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Galen in the Late Antique, Byzantine, and Syro-Arabic Alchemical Traditions

Matteo Martelli

1 Medicine and Galen in the Greek Alchemical Corpus

The main source that allows us to explore the origins of alchemy in Graeco-Roman Egypt along with its late antique and Byzantine developments is a large collection of Greek alchemical writings (usually referred to as Greek alchemical corpus) that is handed down in various Byzantine manuscripts nowadays kept in important European libraries.¹ Next to this collection, a few Greek papyri have been preserved in the hot and dry sand of Egypt; in particular, the so-called Leiden and Stockholm papyri (third–fourth century AD), sometimes defined as ‘(al)chemical handbooks’, collect hundreds of recipes describing metallurgical techniques, procedures for dyeing stones and wool, and methods for producing gold and silver inks.²

Different branches of medicine, such as pharmacology and surgery, are evoked in these alchemical texts. The four books on dyeing attributed to the philosopher Democritus (first century AD) urge the young practitioners, who want to prepare dyeing *pharmaka*, to follow the example of physicians, who carefully test the qualities of natural substances before mixing them in a healing drug.³ Indeed, eleven entries from Dioscorides’ *On Materials of Medicine* have been copied in the last two leaves of the Leiden papyrus (fols 14–16), where they are introduced by the following title: ‘From Dioscorides’ *On Materials (of Medicine)*’ (‘*Dioskoridou ek tou peri hylēs*’). Each entry includes a short description of a mineral ingredient, thus providing alchemists with a helpful tool for identifying the natural substances and their properties.

Not only issues of identification troubled ancient alchemists. They also tried to determine the exact quantities required in the different processes

1 The reference edition for most of these writings is the work in three volumes by Berthelot-Ruelle (1887–8). More recent editions of single treatises will be referred to in the following footnotes. All translations in this chapter are mine, unless otherwise stated.

2 Critical edition, translation, and commentary in Halleux (1981).

3 [Democritus], *Physika kai Mystika*, 14, ed. Berthelot-Ruelle (1887) 11.47 = ed. Martelli (2013) 96.

that were described in the texts they used to study and put into practice. In order to respond to such a practical need, Byzantine alchemical collections include a short metrological work attributed to the Egyptian queen Cleopatra.⁴ This work, which bears the title 'From Cleopatra's [writings], *On Weights and Measures*', overlaps to a large extent with the tenth chapter of a pseudo-Galenic collection of metrological excerpts that appears in Kühn's uncritical edition under the title '*On Weights and Measures* by the wisest Galen'.⁵ The tenth chapter of this collection is indeed entitled 'From Cleopatra's *Cosmetics, On Weights and Measures*'.⁶ Galen's interest in metrology along with the frequent quotations of Cleopatra's *kosmētika* in his pharmacological writings might justify the inclusion of such a chapter in a pseudo-Galenic work; Galen is thus presented as the collector of metrological texts written by earlier authors (we also find a chapter attributed to Dioscorides).⁷ However, the version included in the alchemical corpus seems later, as one can infer from its prologue, which does not appear in the pseudo-Galenic chapter. In Table 29.1, the *incipits* of the two versions are compared.

The description of different kinds of minae is quite similar in the two versions, apart from the mention of *nomismata* in the alchemical text.⁸ The main difference lies in the short introductory passage, which opens only the alchemical version. In this prologue, one finds the very rare Greek word *dynamidia*. While, to the best of my knowledge, this is the only occurrence of the term in a Greek text, its Latin transliteration is quite common in medieval medical literature. Already Isidore of Seville explains the meaning of this word in his *Etymologies* in the early seventh century AD;⁹ later on, the term is generally used to refer to writings that describe the medical properties (*dynameis*) and

4 Greek text edited in Hultsch (1864) I.253–7.

5 Ps.-Galen, *Pond. Mens.*, ed. Kühn (1830) XIX.748–81 = ed. Hultsch (1864) I.218–44. The same collection, that includes sixteen chapters, is already part of the Aldine edition of Galen (1525) IV.48v–50r.

6 Cleopatra's metrological chapter in ps.-Galen, *Pond. Mens.*, 10, ed. Kühn (1830) XIX.767.1–771.3 = ed. Hultsch (1864) I.233–6. This chapter attributed to Cleopatra is also included in a collection of metrological works preserved at the end of the so-called *Hippiatrica Berolinensia*, App. 3, ed. Oder and Hoppe (1924) 442–4, a Byzantine compilation of texts dealing with horse medicine preserved in the Berlin MS Philipps 1538 (tenth century AD) and later codices.

7 See Pernice (1888) for a collection of Galen's authentic passages on weights and measures; on Galen's knowledge of Cleopatra's *Kosmētika*, see Fabricius (1972: 201–2).

8 For a close comparison between the alchemical version and ps.-Galen's work *On Weights and Measures*, see Hultsch (1864: I.137–8).

9 Isidore of Seville, *Etymologies*, 4.10.3, ed. Lindsay (1911): '*Dynamidia* (describe) the power of herbs, that is, their force and capability (*vis et possibilitas*). In herbal medicine, force (*vis*) itself is called *dynamis*, whence also the books where herbal remedies are inscribed are called *dynamidia*'. Translation by Barney et al. (2006: 114; slightly modified).

TABLE 29.1 Incipits of a metrological work attributed to Cleopatra

Ps.-Galen, <i>On Weights and Measures</i> , Chapter 10: From Cleopatra's <i>Cosmetics</i> , <i>On Weights and Measures</i> (<i>ek tōn</i> <i>Kleopatras kosmētikōn peri stathmōn kai</i> <i>metrōn</i>). ^a	Alchemical <i>Corpus</i> : From Cleopatra's [writings], <i>On Weights</i> <i>and Measures</i> (<i>ek tōn Kleopatras peri</i> <i>stathmōn kai metrōn</i>). ^b From the [writings] of Cleopatra, thorough explanation on weights and measures, in order to easily find any kind of mina, litra, uncia, drachma and gramma, and how many obols, <i>thermoi</i> , <i>keratia</i> and <i>chalkoi</i> they consist of. In these [writings] one can find the subtlety of the weights that are used in the <i>dynamidia</i> : I have dealt with this in what follows; and along the subtlety of these weights, in what follows I also dealt with each weight in a general way, so that you will find in this book the weight you look for. A mina [is] the name of a weight; it consists of 16 unciae, 128 drachmae, 384 <i>grammata</i> , 768 obols, 1152 <i>thermoi</i> , 2304 <i>keratia</i> , 6144 <i>chalkoi</i> , 96 <i>nomismata</i> . An Attic mina consists of 12 and ½ unciae, 100 drachmae, 300 <i>grammata</i> , 600 obols, 900 <i>thermoi</i> , 1800 <i>keratia</i> , 4800 <i>chalkoi</i> .
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a Ps.-Galen, *Pond. Mens.*, 10, ed. Kühn (1830) XIX.767.1–9 = ed. Hultsch (1864) I.233.20–234.3.
b Greek text edited in Hultsch (1864) I.253.23–254.14.

uses of vegetal substances as well as animal and mineral ingredients (although to a smaller extent).¹⁰ With this general meaning, *dynamidia* is often appended to different treatises transmitted in Latin manuscripts under the name of

10 See, e.g. Everett (2012: 54–5) with earlier bibliography. More common expressions in Greek to refer to this kind of writings are *en tais dynamessin* (from *dynamis*, ‘property’,

Hippocrates (e.g., the *Dynamidia Hippocratis* mainly dealing with dietetics) and, more frequently, under the name of Galen.¹¹ The reference to this genre of pharmaceutical texts in a metrological chapter makes perfect sense. After all, a good knowledge of weights and measures was certainly necessary for at least two essential aspects of the work of ancient pharmacists or alchemists: (1) to properly interpret the written formulas either of 'Galenic' medicines or of alchemical drugs; and (2) to mix the right quantities of the required ingredients accordingly.

If we turn our attention to surgery, we must note that the Graeco-Egyptian alchemist Zosimos of Panopolis (third–fourth century AD) explicitly refers to illustrated books that explain how to mend fractures. Diseased patients – he says – were assisted by physicians 'bearing books illustrated with geometrical drawings and hatched diagrams'.¹² Regrettably, Zosimos does not specify the author(s) of similar handbooks.¹³ Moreover, his text belongs to a rather difficult period in the history of medicine; after Galen's death, in fact, a variety of medical systems were competing with each other until the spread of Galenism (sixth–seventh century AD), when 'arguments over the interpretation of Galen had replaced disputes over alternatives to Galen'.¹⁴ If different medical sources may be implied behind Zosimos' passage,¹⁵ for later alchemical texts Galen's influence will become more evident.

The medical expertise of alchemists is emphasised again in the Byzantine alchemical poem *On the Divine Art in Iambic Verses*, falsely attributed to the philosopher Theophrastus (seventh–eighth century AD).¹⁶ Its prologue praises the fortunate life of sophists (*sophistai*), that is learned men who, like rhetorical performers (*rhētores*), spent their days inspired by a great wisdom (*pansophōs*). Their education was not confined to alchemy, but touched upon a wide array

'capacity') or *en tois dynamerois* (from *dynameron*, 'pharmacological book'): see Ieraci-Bio (1991). Fischer (2008: 77–9) suggests that the term might simply refer to recipe-books.

11 See Everett (2012: 18–21); Fischer (2008: 76–7); Mac Kinney (1936).

12 Zosimos of Panopolis, *Authentic Memoires*, 1.180–3, ed. Berthelot-Ruelle (1888) 11.233.20–1 = ed. Mertens (1995) 9.

13 Already Galen pointed out that Julian, methodic physician and teacher in Alexandria, tried to use painting to teach medicine (*MM*, 1.7, ed. Kühn (1825) x.54.1); see Lazaris (2013: 144). However, there is no evidence that Galen's anatomical writings were at some point illustrated with images or diagrams.

14 Nutton (2004: 292).

15 For instance, scholars usually agree that the images that illustrate Soranus' work *On Bandages* or Apollonius of Citium's abridged version of Hippocrates' *On Joints* in Byzantine MSS go back to late antique models; see, e.g. Marchetti (2010).

16 See Letrouit (1995: 82–3).

of disciplines: natural philosophy, astronomy/astrology, and medicine. A quite substantial section of the prologue is devoted to the last discipline:

Yet more than this, the causes we reveal
 Of each affliction in the body's frame;
 Experimentally our school explores
 The science, art and ends of medicine,
 With such success that our prognosis shows
 What sicknesses are destined to appear
 And what is best to cure or ward them off.
 ... with exactness we describe the flowers,
 (Their qualities, their mixtures and their kinds),
 And taste of juice and substances of plants.
 Each class of growing herbs has been portrayed
 For our prognosis and with words exact,
 We also know the hues and kinds of stones,
 The places where the metals are produced,
 And all their properties both good and bad.
 The many kinds of creatures in the sea
 Are known to us and all their many forms, etc.¹⁷

Generally speaking, ps.-Theophrastus' poem was influenced by the alchemical 'lectures' (*praxeis*) of the Byzantine alchemist Stephen of Alexandria, who worked under the emperor Herakleios (AD 610–41).¹⁸ Some scholars have proposed to identify Stephen the alchemist with the homonymous commentator of Hippocrates' and Galen's works.¹⁹ Among other writings, Byzantine manuscripts preserve under the name of Stephen of Athens two commentaries on *Prognostic* and *Aphorisms*, in which the author follows Galen's interpretation of the Hippocratic texts, along with a commentary on Galen's *Therapeutics to Glaucón*. The exact role of Stephen as teacher of medicine in Alexandria, his possible relations with other *iatrosophists* (such as Gesios and Asklepios, whose works are mentioned in his writings) and his possible identification with Stephen the alchemist are all points still debated among scholars.²⁰ Despite these uncertainties, ps.-Theophrastus' verses clearly evoke sophists

17 Ps.-Theophrastus, *On the Divine Art in Iambic Verses*, 33–54, ed. Ideler (1842) 11.329 = ed. Goldschmidt (1923) 35–6. English metrical translation by Browne (1920: 195–6), who based his interpretation on the Greek text edited by Ideler.

18 See Goldschmidt (1923: 35–6); Browne (1920: 193–4).

19 See, in particular, Wolska-Conus (1989: 5–89); Papathanassiou (2006: 197–8).

20 For a recent summary of the *status quaestionis*, see Boudon-Millot (2016b).

skilled in the *iatrikē technē*, who might be set side by side with late antique and early Byzantine *iатrosophists* and teachers of Galenic medicine, such as Gesios, Asklepios, or Stephen himself.

The main topics that were taught by these teachers – such as nosology or prognosis, both explicitly mentioned in the prologue – were actually explained on the basis of a selection of sixteen treatises by Galen (the so-called Alexandrian canon).²¹ Finally, even though Galen's pharmacological works were not part of this canon, one must observe that the division of the natural ingredients used in the second part of the prologue (vv. 43–60) mirrors the standard classification of the simples introduced in the practical section (books 6–11) of Galen's treatise *On the Capacities of Simple Drugs*: books 6–8 are indeed devoted to plants, book 9 to minerals (earths, stones, and metals), and books 10–11 to animals and animal products.

Another work by Galen is explicitly cited in one of the thirty chapters included in an almost contemporary alchemical compilation, *On the Making of Gold*. In the first chapter, which deals with the question whether a species (*eidōs*) is composed and not simple, the alchemist Christianos (sixth–eighth[?] century AD)²² quotes a short passage from Galen's *On Affected Parts*:²³

If the parts had just one and the same treatment and they were by no means different one from another, there would be no parts at all. Indeed, each natural [or] artificial part brings something specific (*ti xenon*) into the whole (*to holon*; i.e. the whole entity to which the single part belongs), and without this part, the All (*to pan*) would remain incomplete, as is possible to see for the bodily parts, which Galen referred to as 'places' (*topoi*); let's listen to his own words: the bodily parts – he says – are called 'places'.²⁴

In general terms, Christianos' line of reasoning seems to imply a certain analogy between the human body and the metallic body (called *sōma* in the alchemical writings). As each single bodily part contributes to form a complete human body, in the same way a metallic body represents the combination of different parts or components. By treating and combining these parts – we

21 See, e.g. Overwien (2012); Iskandar (1976). See also Garofalo (Chapter 3) in this volume.

22 The chronology of this author is uncertain: Berthelot-Ruelle (1888: 111.378–9) propose the sixth century AD; Letrouit (1995: 62) is more inclined to the seventh/eighth century AD.

23 These chapters are scattered in different sections of Berthelot-Ruelle's edition; for their correct order, see Letrouit (1995: 62).

24 Galen, *Loc. Aff.*, 1.1, ed. Kühn (1824) VIII.695–6 = ed. Gärtner (2015) 226.4. Christianos, *On the Making of Gold*, 1.1, ed. Berthelot-Ruelle (1888) 11.272.10–15.

may suppose – the alchemist tried either to ‘synthesise’ the perfect metallic body (namely, gold) or to produce specific substances that could bring about the metallic transmutation.²⁵

The argument developed by Christianos pertains to the philosophical question of the unicity of natural and artificial species, discussed for instance by the Neoplatonic philosopher and commentator Proklos (c. AD 410–85). In his commentary on the *Republic*, Proklos targets alchemists who ‘claim to make gold out of the mixture of certain species (*ek mixeōs tinōn eidōn*), while nature makes the one species of gold (*to eidōs hen tou chrysou*) before the mixture of the species they talk about.’²⁶ The alchemist Christianos addresses a similar philosophical issue by relying on the authority of Galen. Such a meaningful combination of philosophical and medical education points to a late antique scholar system.²⁷ After all, Galen’s work *On Affected Parts* was one of the sixteen treatises that belonged to the Alexandrian canon mentioned above.

2 Galen in the Syriac Alchemical Tradition

As already seen, the reference that Zosimos makes to surgical handbooks is too vague for us to understand whether he had specific medical authors in mind. On the contrary, the identification of the medical sources of some Syriac works attributed to Zosimos is certainly easier. A collection of twelve alchemical books has been preserved in Syriac under the name of the Graeco-Egyptian alchemist.²⁸ Alongside these books, which probably depend on (now lost) Greek writings, we also find a somehow different and separated treatise that is introduced by the title: ‘Incipit of the ninth book by the wise Zosimos on the varieties of earth and (on the varieties) of the dust that it produces, on stones, and on the medicines that derive from earth.’²⁹ Regardless of the

25 According to Berthelot-Ruelle’s interpretation (1888: III.262, n.2), the expression ‘the All’ (*to pan*) would have referred to the metallic alloy that was to be transformed into silver or gold. We must add that similar discussions about the simple or composite nature of natural or artificial substances are common in the Greek alchemical corpus: see, e.g. Viano (2015: 318–20) for an account of Zosimos’ and Christianos’ discussions on the nature of the ‘water of sulphur’ (or ‘divine water’), a central dyeing compound in ancient alchemy.

26 Proklos, *Commentary on Plato’s Republic*, ed. Kroll (1901) II.234.17–9. On this passage, see Viano (1996: 202–3).

27 See Westerink (1964) and the titles quoted above, n.21.

28 For a preliminary French translation of these books, see Berthelot-Duval (1893: 210–66). I am currently preparing a critical edition and English translation of these texts. On this collection, see Martelli (2014: 199–209).

29 See Berthelot-Duval (1893: 297–8); Martelli (2010: 211–28).

(false) attribution to Zosimos, this last treatise represents a compilation that shortens and combines Galenic passages taken from the last three books of *On the Capacities of Simple Drugs*. The Syriac version is divided into four sections, each one organised as a kind of lexical list that follows the order of the substances as they are described in the Galenic books. For each entry, the anonymous compiler provides the Greek term transcribed with Syriac letters, its translation into Syriac and, in some cases, a description of variable length that depends on Galen's text. The following correspondences can be detected:

1. The first Syriac section is a list of different minerals that depends on the part on *metallika* (i.e. mined substances) in Galen's book 9.³⁰
2. The second section describes different kinds of earth by following the order in which they are presented in Galen's book 9.³¹ The part is introduced by the title: 'Explanation of any kind of earth by the wise Zosimos'.
3. The third section includes a list of stones that follows the order of the chapters devoted to the same topic in Galen's book 9.³² A general statement opens the Syriac passage: 'Now I deal with the stones that, if crushed with mortars and files, become liquid and produce a juice (*chylos*)'. The following *explicit* closes the section: 'End of the names of the stones that have healing properties of any kind and that are used by the wise physicians. Zosimos dealt with them and described them for the queen and priestess Theosebeia'.³³

The medical framework from which the names of stones are taken seems to be acknowledged in the last *explicit*, despite its attribution to the alchemist Zosimos rather than to the physician (and legitimate author) Galen. However, as we shall see, all the data regarding how physicians made use of these substances in healing practices are left aside. Moreover, the original structure of Galen's book 9 is slightly distorted, since the Syriac abridgment opens with the description of the *metallika*, which rather constitutes the third and last part of Galen's book. The great relevance of this group of ingredients for the alchemical practice probably explains the opening position they occupy in the new alchemical *pastiche* of Galenic passages. The centrality of alchemical interests represented the main criterion that guided the selection of data to be kept in each entry. For instance, as far as *diphryges* (lit. 'twice roasted') is concerned, we read:

30 Galen, *SMT*, 9.3.2–40, ed. Kühn (1826) XII.210–44.

31 Galen, *SMT*, 9.1.1–4, ed. Kühn (1826) XII.165–92.

32 Galen, *SMT*, 9.2.2–21, ed. Kühn (1826) XII.195–208.

33 Theosebeia is a well-off (probably Roman) woman to whom Zosimos addressed many of his alchemical treatises.

I took a lot of this medicine as well from a hill in the island of Cyprus. There was a mine from which [this substance] comes and that is thirty stadia away from the city. It lay in the region between a building that was close to the mine and the city that was nearby the mine. The procurator who was in charge for that mine told us that [this substance] is what remains unused ... from the heat of the furnaces.³⁴

When compared with the original Galenic passage on *diphryges*,³⁵ the Syriac passage is clearly shorter and leaves all the details about the medical properties and applications of the substance aside. In the new alchemical context, readers were probably more interested in useful information about the availability of the substances in different geographical areas or in a detailed account of their nomenclature.

Indeed, if we come to the fourth and last section of this Syriac section, just a dry list of names is taken from books 10–11 of Galen's pharmacological treatise. This section is simply introduced by the general *incipit*: 'Explanation of further *materia medica* that belongs to the wise Zosimos'. The first entries read as follows:

gala, that is, milk.
tyros, that is, cheese.
boutyron, that is, oil of butter or butter or as you want to call it.
pytia, that is, curdled milk.
cholē, that is, bile.
hidrōs, that is, sweat.
ouron, that is, urine.
sialon, that is, saliva.
rhypōs, that is, dirt.³⁶

This short list is what is 'distilled' out of Galen's book 10, which originally included a short introductory chapter,³⁷ and a second chapter³⁸ with the description of many animal fluids and solids: from different kinds of blood (§§1–6) to different kinds of excrements (§§18–29) and finally 'dirt of human beings' (§30). The Syriac list omits the first paragraphs on blood and those on excrements

34 Syriac text in Martelli (2010: 214).

35 Galen, *SMT*, 9.3.8, ed. Kühn (1826) XII.214–7.

36 For the Syriac text, see Martelli (2014: 210).

37 Galen, *SMT*, 10.1, ed. Kühn (1826) XII.245–53.

38 Galen, *SMT*, 10.2.1–30, ed. Kühn (1826) XII.253–309.

almost at the end of the book; for the rest, it follows the order of Galen's chapter 2, where we actually find milk (§§7–8), cheese (§9), butter (§10), curdled milk of seal (§11), bile (§12), sweat (§13), urine (§14), and saliva (§15).

The list format may also allow us to further reason on the origins of our Syriac compilation. According to the famous epistle (*Risālah*) of Ḥunayn ibn Ishāq, the physician and philosopher Sergius of Resh 'Aina (d. 536) produced the earliest Syriac translation of books 6–11 of Galen's *On the Capacities of Simple Drugs*.³⁹ His translation of the botanical part (books 6–8) features lexical lists that are quite similar to the lists mentioned above: we cannot exclude that Sergius' translation represents the text shortened and reshaped in the alchemical *pastiche*, as recently suggested by scholars working on a precious Syriac palimpsest that preserves a more complete translation of Galen's pharmacological work.⁴⁰ The alchemical reputation of Sergius, which seems to be acknowledged in al-Nadīm's bio-bibliographical *Book of the Catalogue* (*Kitāb al-Fihrist*), might be thus justified.⁴¹

3 The Arabic Alchemical Tradition

Among the beautiful pictures that enrich the *Book of the Theriac* (*Kitāb al-Diryāq*) in the MS Ar. 2964 (Paris, BNF; copied in AD 1199), we find the portraits of nine Greek physicians who invented and improved the antidote, from Andromachus the Elder to Galen.⁴² The *Book of Theriac* is usually described as a pseudo-Galenic treatise on the preparation of the famous antidote, perhaps based a (no longer extant) late antique Greek model. Among the illustrations of different anecdotes on the therapeutic uses of snakes, an image in particular depicts a ruler (named Bathūlūs), whose favourite slave, after being poisoned with opium, was bitten by a snake; rather than killing him, the bite miraculously cured the slave (MS Ar. 2964, fol. 27). This story is not detectable in any extant work by Galen, but it is already outlined in the *Book of Poisons* (*Kitāb al-Sumūm*) by the famous alchemist Jābir ibn Ḥayyān (eighth[?] century AD),

39 Ḥunayn, *Risālah* (Epistle), 56, ed. Lamoreaux (2016) 67–8.

40 See Bhayro, Hawley, Kessel, and Pormann (2013: 145). See also Bhayro (Chapter 8) in this volume. On the lists in the Syriac translations of books 6–8, see Merx (1885); Bhayro and Hawley (2014: 296–9).

41 Ibn al-Nadīm, *Book of the Catalogue* (*Kitāb al-Fihrist*), 10.9, ed. Flügel (1871) 1.354.24–5.

42 On this treatise and its illustrated manuscripts, see Guesdon et al. (2009); Kerner (2007). On Galen's medieval portraits, see Lazaris (Chapter 31) in this volume.

where the anecdote is explicitly attributed to Galen.⁴³ In other cases, Jābir's toxicological treatise and the *Book of the Theriac* share anecdotes that already occur in Galen's writings. For instance, *On the Capacities of Simple Drugs* and the *Outline of Empiricism* tell the story of a man suffering from elephantiasis who was healed by drinking the wine from a jar that contained a dead snake: the same story occurs in both the Arabic treatises mentioned above.⁴⁴

The important role played by Galen in the Arabic tradition on toxicology is certainly understandable given Galen's reputation in the field. This reputation also spreads in different treatises attributed to Jābir. In the more alchemically oriented *Little Book of Balances* (*Kitāb al-Mawazīn al-ṣaghīr*), the physician is mentioned as a source on the healing properties of the heads of snakes.⁴⁵ The *Book of Concentration* (*Kitāb al-Tajmī*, on the artificial generation of human beings) as well as the theurgical *Book of the Fifty* (*Kitāb al-Khamsīn*) refer to Galen's *On the Composition of Drugs according to Places* and to the interpretation Galen provides there of the antidote by Philo of Tarse.⁴⁶

Different references to Galen are disseminated in the huge corpus of writings attributed to the famous and enigmatic figure of the Shiite alchemist Jābir ibn Ḥayyān, under whose name the *Book of the Catalogue* (*Kitāb al-Fihrist*, tenth century AD) lists more than 300 titles.⁴⁷ Poisons and snakes apart, Galen is evoked with regard to a wide spectrum of subjects, from anatomy to philosophical matters. For instance, Galen's *On the Function of the Parts of the Body* guides the description of the human skull in the Jābirian *Book of the Result* (*Kitāb al-Ḥāṣil*), even though Galen's teleological approach is explicitly criticised in the *Book of the Research* (*Kitāb al-Baḥṭh*).⁴⁸ This last treatise,

43 See Boudon-Millot (2009: 49, n.12); Kerner (2007: 33, n.74). The *Book of Poisons* has been edited in facsimile and translated into German by Siggel (1958; see 84–5 for this anecdote). On this treatise, see Kraus (1943: 1.156–9).

44 Galen, *SMT*, 11.1, ed. Kühn (1826) x11.312.9–313.25; Galen, *Subf. Emp.*, 10, ed. Deichgräber (1965) 75.21–77.7. See Boudon-Millot (2009: 49; 2016a: cxxxvii). For the Arabic texts, see Siggel (1958: 40) for Jābir's *Book of Poisons* and MS Paris Ar. 2964, fol. 22 for ps.-Galen's *Book of Theriac*.

45 Jābir, *Little Book of Balances* (*Kitāb al-Mawazīn al-ṣaghīr*), ed. Berthelot-Houdas (1893) 119, and tr. 152; on this Jābirian text, see Kraus (1943: 1.123).

46 Galen, *Comp. Med. Loc.*, 9.4, ed. Kühn (1827) x111.267–76. Jābir, *Book of Concentration* (*Kitāb al-Tajmī*), excerpts, ed. Kraus (1935) 374.11; see also Haq (1994: 35). Jābir's *Book of the Fifty* (only partially preserved) is unedited; see Kraus (1942–3: 1.147; 11.118, n.1).

47 Ibn al-Nadīm, *Book of the Catalogue* (*Kitāb al-Fihrist*), 10.12, ed. Flügel (1871) 1.355–8. See Fück (1951: 97–104).

48 Only a few passages from the two books have been edited: Jābir, *Book of the Result* (*Kitāb al-Ḥāṣil*), excerpts, ed. Kraus (1935) 533–41; *Book of the Research* (*Kitāb al-Baḥṭh*), excerpts, ed. Kraus (1935) 501–27. For the references to Galen, see Kraus (1943: 1.83) and (1942: 11.327).

which philosophically discusses the art of theurgy, also includes references to Galen's *On the Natural Capacities*, *On my Own Opinions*, and to two treatises that have not reached us in Byzantine manuscripts, namely, *On the First Unmoved Mover* and *On Demonstration*.⁴⁹ Both are cited within a discussion on the Aristotelian theory of the prime mover and Galen's related critique. Moreover, *On Demonstration* is quoted again in Jābir's *Book of the Transformation* (*Kitāb al-Taṣrīf*), which accounts for Galen's philosophical stance on the question of the eternity of the world; this passage complements the quotation from the same Galenic treatise in al-Rāzī's *Doubts About Galen* (*Kitāb al-Shukūk 'alā Jālīnūs*).⁵⁰

The influence of Galen in theoretical issues – already detected in early Byzantine alchemical treatises – becomes even clearer in the Jābirian discussions of the first primary qualities (hot, cold, wet, dry) and of the three different degrees of intensity (*taxeis*) in natural properties, which is often based upon different Galenic treatises (e.g. *On the Elements* or Galen's pharmacological writings). On the other hand, Jābirian texts also criticise Galen, in particular when they question the reliability of senses in testing the properties of natural substances. Against the individual and subjective character of sensation, Jābir develops his 'science of balance' (*'ilm al-mizām*), which aims at assessing the properties of each substance through arithmetic calculations based on the letters that form its name.⁵¹

Probably because of his considerable impact, Galen was even credited with some form of alchemical knowledge within the Jābirian corpus, as emerges in the fourth section of the *Book of the Stones According to the Opinion of Balīnās* (*Kitāb al-Aḥjār 'alā ra'y Balīnās*, i.e. Apollonius of Tyana). Here Galen is said to have studied alchemy (*al-ṣinā'ah*, lit. 'the art') in his youth, before starting his education in philosophy (*al-falsafah*).⁵² Similar legends probably legitimise Galen's reputation as an adept of the art, which becomes quite common in Arabic alchemical literature. For instance, his name is mentioned – along with the name of other physicians, such as Hippocrates and probably Oribasios and

49 Jābir, *Book of the Research* (*Kitāb al-Baḥth*), excerpts, ed. Kraus (1935) 509.15; 517.16ff.; 521. For a French translation of the relevant passages, see Kraus (1942: II.327–8).

50 Jābir, *Book of the Transformation* (*Kitāb al-Taṣrīf*), excerpts, ed. Kraus (1935) 420.7ff.; for a French translation of the relevant passage and a short commentary on it, see Kraus (1942: II.329). The Galenic passage is also quoted in al-Rāzī, *Doubts About Galen* (*Kitāb al-Shukūk 'alā Jālīnūs*), ed. Muḥaqqiq (1993) 6.9–12; see Strohmaier (1998: 271–4). On Galen's reception by al-Rāzī, see Koetschet (Chapter 10) in this volume.

51 See Kraus (1943: II.187–303, in part. 190–3) and Haq (1994: 49–80, in part. 65–8).

52 This part of the fourth section of the *Book of the Stones* is edited neither in Kraus (1935) nor in Haq (1994; on this omission, see p. 36 of the Arabic text and p. 253). Arabic text quoted in Kraus (1942: II.326, n.1).

Paul (of Aegina) – in the list of alchemists at the beginning of the *Paradise of Wisdom* (*Kitāb Firdaus al-ḥikmah*), attributed to the Omayyad prince Khālīd ibn Yazīd (AD 668–704).⁵³ In tenth-century Baghdad, the scholar al-Nadīm writes in his *Book of the Catalogue* (*Kitāb al-Fihrist*):

Muḥammad ibn Abū Bakr al-Rāzī, i.e., Zakarīyā', asserts that no one can succeed in the science of philosophy, nor can a scholar be called a philosopher, unless he [first] succeeds in the science of the alchemical art ... In another passage of his book, al-Rāzī asserts that many philosophers, Phythagoras, Democritus, Plato, Aristotle and, finally, Galen practised the Art.⁵⁴

According to Fück's interpretation,⁵⁵ the scholar al-Nadīm would be referring to al-Rāzī's *Book of Secrets* (*Kitāb al-Asrār*), whose prologue includes a list of ancient authorities in the field of alchemy, whose teaching would have guided al-Rāzī's account. According to the translation by Stapleton, Azo, and Ḥusain, this prologue reads:

Know that I have compiled this book out of the secrets of the experiments in this Art, so that it may be a guide to be followed and an authority to be referred to ... Verily we have explained in this book what the ancient Sages, viz: Ghādhimūn (Agathodaimon), Hurmus (Hermes), Anṭūs (or Aṣtus), Balīnās (Apollonius), Aflātūn (Plato), Jālīnūs (Galen), Arastātālīs (Aristotle), Fīthāghūras (Pythagoras), Buqrāṭ (Hippocrates; or Pseudo-Socrates), Sarjis (Sergius), Hiraql (Heraclius), Mariānus, Khālīd ibn Yazīd, and my master, Jābir ibn Ḥayyān (may Allāh illuminate his face!) have concealed.⁵⁶

53 The preface of this alchemical work has been edited and translated by Ruska (1929: 294–6).

54 Ibn al-Nadīm, *Book of the Catalogue* (*Kitāb al-Fihrist*), 10.1, ed. Flügel (1871) 1.351–2. Translation by Fück (1951: 88).

55 See Fück (1951: 110, n.6).

56 Stapleton, Azo, and Ḥusain (1927: 335). The name of Galen is mentioned in the prologue as preserved in different MSS (Leipzig, MS Or. 266: Escorial, MS Ar. 700), where, however, Ruska (1937: 19–24) suggests reading the name of Bālīnūs (i.e. Apollonius of Tyana) instead of Jālīnūs (Galen). According to the summary that Stapleton and Azo (1910: 71) gave of al-Rāzī's *Book of Testimonies* (*Kitāb al-Shawāhid*) as preserved in MS *kīmīyā'* 12 (Rampur, Raza Library) the name of Galen (Jālīnūs) would also appear among other authorities whose opinions are collected in the book (e.g. Hermes, Maria, Zosimos, etc.).

The mention of Galen does not come unexpected, given both al-Rāzī's interest in Galen's medical works (especially in his own medical writings) and the above mentioned sources attributing the same kind of expertise to the Greek physician. Galen's profile becomes more and more alchemically tintured: for instance, the view of the physician on the different degrees of intensity is quoted by the twelve-century alchemist al-Tughra'i in his commentary on a text by Zosimos;⁵⁷ moreover, alchemical texts attributed to Galen are transmitted in Latin manuscripts, which still await proper editions and translations.⁵⁸

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57 El Khadem (1996: 172).

58 Ullmann (1971: 158–9).

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Galen in Asia?

Ronit Yoeli-Tlalim

Although one can generally say that the place of Galen in the history of Asian medical systems is rather minor, such a statement nonetheless requires some qualification.¹ Galen appears in the rich Tibetan literary genre of medical histories as one of the figures who brought medical knowledge to Tibet. More significantly, in India, Galen was a key figure in Unani (literally ‘Greek medicine’), which continues to thrive on the subcontinent. With regards to China, there are a number of anecdotal mentions of Galen in works either referring to China or composed in China. In most of the cases discussed here, Galen comes to Asia through mediating languages, primarily Persian and Syriac, and medical traditions – Islamic medicine in the case of India and Renaissance medicine in the case of the Jesuits in China.² Hence, the story of Galen in Asia is to a large degree an extension of these medical and literary traditions.

Two related but separate issues need addressing when trying to assess the place of Galen in Asia. The first issue is an assessment of mentions of Galen in Asian texts and contexts. Narratives on the origins and history of medicine, and knowledge more generally, are important within this regard. Analysis of how and why these narratives were constructed can reveal important political, religious, economic, and cultural factors at play. The second issue is the presence, or lack thereof, of Galenic medical knowledge within Asian traditions. These two issues in turn raise a third one involving the relationship between them: If a tradition declares itself to be influenced by Galenic medicine, does it necessarily mean that it is so? Narratives on the origins of medical knowledge raise the large and complicated question of whether and to what extent such accounts actually reflect the nature of the knowledge they describe. In other words, they raise questions like: When and why does a culture, religion, or state ideology choose to present or construct itself as linked to a particular culture? Are there correspondences between declaring a tradition as linked to a particular tradition and the tradition indeed being linked?

1 This work was supported by the Wellcome Trust (grant number: 088251).

2 On the translation of Galenic works into Syriac and Arabic, see Bhayro (Chapter 8) and Cooper (Chapter 9) in this volume, respectively.

1 Galen in Tibet?

An intriguing account found in a number of Tibetan medical histories from the sixteenth century onwards tells of a famed physician from the West by the name of Galenos, who was invited by the first king of Tibet to Lhasa along with other famed doctors from China and India.³ One finds the following in the version in the *Mirror of Beryl*, an account of the history of Tibetan medicine by Sangye Gyatso (1653–1705), regent of the Fifth Dalai Lama (1617–82) and author of several seminal texts on Tibetan medicine:

Once when the king was ill, the Indian doctor Bharadhaja, the Chinese doctor Hsüan Yüan Huang, and the Taksik or Phrom doctor Galenos were invited to Tibet to cure him ... They held many discussions and jointly composed a medical text in seven chapters called *Weapons of Fearlessness*, which they offered to the king ... Therefore, all medical science was compiled into these three main systems and propagated by them. The king gave gifts to the Indian and Chinese doctors, and they travelled back to their own lands. Galenos stayed on as royal physician. It is said that he mostly resided in Lhasa, where he composed many texts. He married and had three sons.⁴

This captivating narrative has led to many accounts in secondary literature stating that Greek medicine was adopted in Tibet in the eighth century. One should not, however, jump to such hasty conclusions, but rather try to understand the significance of this narrative. This account, along with similar ones found in Tibetan medical histories, raises many intriguing questions. The first of them is from where does this Galenos come? The Tibetan delineation of Phrom or Khrom is derived from Rum, or Rome, and usually refers to Byzantium. The other option the text raises is Tazig. Early Tibetan geographies are in agreement that Tazig is a large kingdom to the west of Tibet.⁵ It could refer to Persia or to the Abbasid Empire.⁶ The term is also used when referring more generally to Muslims, Arabs, or Persians. That both of these are options

3 The Tibetan material for this chapter is based on Yoeli-Tlalim (2012). On Tibetan medical histories more generally, see Garrett (2007).

4 For the English translation, see Kilty (2010: 148–9). For the Tibetan text, see: Sangs rgyas rgya mtsho (Sangye Gyatso), *Gso ba rig pa'i khog 'bugs vaidürya'i me long (Mirror of Beryl)*, (2008) 96. This quote was first discussed by Beckwith (1979: 301).

5 The various Tibetan spellings are Ta zig, ta zhig, ta chig, stag gzig, stag gzigs. On these terms, see Yoeli-Tlalim (2011).

6 See Martin (2011).

for the possible origin of the Galenos who shows up in Lhasa is not terribly surprising, since from a Tibetan perspective it is hard to know where the exact demarcation between Tazig and Khrom stands, and as Dan Martin has pointed out, they often fall into the same place on the map.⁷

Are the links described above between Tibetans and Muslims to the West even a possibility? Tibet is usually perceived as remote and isolated, but that has not always been the case. On a map of Asia as it was more or less at the time this account is presumably taking place, one would find three major empires abutting each other: the Abbasid Empire, founded in 750; the Tibetan Empire, which reached its height in the early ninth century; and Tang China (618–907). The close proximity of the Abbasid and Tibetan Empires of the time explain what people often find surprising, but is not – on-going cultural and other connections between Tibet and the Islamic world from the eighth century onwards.⁸ Furthermore, Tibet's mediating position was significant in terms of Asian medical knowledge during and after the time of the Tibetan Empire as well as during the Mongol era.⁹

Another important question that this account raises is who are the 'colleagues' of Galenos referenced here? In terms of the Chinese figure, this would be the Yellow Emperor, who in Chinese tradition is considered the source of Chinese medicine.¹⁰ Bharadvāja, the other 'colleague', holds a similar place in Indian medicine. In the opening chapter of the Ayurvedic classic the *Carakasamhitā*,¹¹ Bharadvāja is described as the member of the assembly of sages who approaches the God Indra, requesting his help in eradicating illnesses that had befallen humankind. Bharadvāja's request is granted by Indra, who transmits medical knowledge to him. Bharadvāja then disseminates this knowledge to other sages. Bharadvāja is also mentioned in other Indian medical treatises, as well as in Vedic literature, the epics, and the Purāṇas.¹² Both the Chinese Yellow Emperor and the Indian Bharadvāja are mythical figures, a point to keep in mind when trying to make sense of Galen's place in this narrative.

Another key question is: What is the text claiming with respect to a time frame? Sangye Gyatso's narrative, like similar narratives that followed his,

7 Martin (2011).

8 On these various connections, see Akasoy, Burnett, and Yoeli-Tlalim (2011).

9 See Yoeli-Tlalim (forthcoming) and Buell (2011).

10 Unschuld (1985: 107).

11 The date of this text remains unknown. Earlier versions of it may date to as early as the fourth century BC, but the text has been supplemented, edited, and partially rewritten by later authors up to the eighth century AD. See Wujastyk (1995: 22).

12 For an overview of these, see Meulenbeld (1999–2002: IA.152–4, IIA.158–60, 764, 781).

locates this episode at the time of the seventh-century Tibetan king Songtsen Gampo, whose reign marks the beginning of recorded history in Tibet, and indeed, Tibetan culture at large. These narratives thus present a history of Tibetan medicine that was formulated in its initial stages as a synthesis of Greek, Indian, and Chinese medical systems.

Looking critically at this notion of early Tibetan medicine as a synthesis of Greek, Indian, and Chinese traditions, two key issues stand out. The first is that in the early history of Tibetan medicine, the two main influences detected in medical texts are Indian and Chinese. There is also some Graeco-Arab influence, primarily in the diagnostic method of urine analysis, which does not feature in Ayurvedic or Chinese medicine as a key diagnostic tool, but is central in Tibetan diagnosis. Comparing the urine analysis sections in an early Tibetan medical text, the *Medical Method of the Lunar King* (*Zla ba'i rgyal po*), and in Ibn Sīnā's *Canon of Medicine* (*Qānūn fī al-ṭibb*) reveals remarkable similarities not only in content, but also in the structure of the texts.¹³ This input, along with input detectable in *materia medica*,¹⁴ however, does not quite add up to a 'meta-narrative' in which Galenos is preferred, the one who stays on as court physician and establishes a local lineage, while the Yellow Emperor and Bharadvāja are sent back to China and India respectively. The nature of Tibetan medical literature itself leads to the conclusion that both in the formative and the mature/classical periods of Tibetan medicine, the Galenic influence is clearly secondary to that deriving from India and China.

Another issue worth considering here is that in earlier exemplars of Tibetan medical histories, from the thirteenth century onwards, despite references to influences from the West, there are no mentions of Galenos, nor do the accounts present Graeco-Arab teachings as being in any way superior in the sense implied by Sangye Gyatso.¹⁵ How then should one understand the primary position given to Galenos in Sangye Gyatso's account? What all the above points to is that the accounts on Galen coming to Tibet at this time reflect more the period in which they were written, the seventeenth century onwards, than the period to which they supposedly refer, the seventh and eighth centuries. Galen as representing the origin of Western medicine – here meaning Islamic medicine – came to Tibet most probably via Mughal India, with which Tibet maintained close relations.

13 See Yoeli-Tlalim (2010).

14 For other inputs, see Yoeli-Tlalim (2013).

15 For a study of a thirteenth-century exemplar of the medical history genre, see Martin (2007).

Indeed, the autobiography of the Fifth Dalai Lama tells how in 1675 he brought to his court a physician from India known for his expertise in cataract surgery. This physician, named as Manaho, is credited with a work on ophthalmology preserved in the Tibetan Tanjur (Bstan 'gyur), the part of the Tibetan Buddhist canon composed primarily of various commentarial works. The Tibetan title of this short work on the treatment of eye diseases, translated in the Potala by Lhun grub, is *Opening the Eyes to See* (*Mig 'byed mthong ba*). The preface says the author was a physician of the Indian emperor Shah Jahan (r. 1628–58) and that he came from the country of Paripura. The location to which this refers is not entirely clear, but according to Martin, it appears to be linked to Persia.¹⁶ The Fifth Dalai Lama says that Manaho taught the art of cataract removal to a local Tibetan physician, who later performed it successfully on the Fifth Dalai Lama himself.¹⁷

More generally, this episode should be viewed within the context of the Fifth Dalai Lama's active efforts to seek out medical experts from abroad, not only for his own well-being, but also with a view towards broadening Tibetan medicine's repertoire of diagnostic, therapeutic, surgical, and pharmacological tools.¹⁸ The person who most likely oversaw the invitation of this foreign physician, along with other physicians from neighbouring countries, was the Fifth Dalai Lama's regent, Sangye Gyatso, author of the above Galenos narrative. Sangye Gyatso also played a crucial role in systematising Tibetan medicine. One should therefore consider the following aspects about him in conjunction: his composition of a seminal text on the history of Tibetan medicine, from which the above quote on Galen is taken; his systemisation of Tibetan medicine; and his own connections with foreign physicians. Together they indicate that the significance Sangye Gyatso gives to Galen reflects to a great extent Galen's connections to Islamic medicine, as found at the time in Mughal India, projected back to the origins of Tibetan medicine.

2 Galen in India?

Medical historians are often thrilled to hear that Greek medicine, known in India as Yūnānī or Unani, is alive and still practised on the subcontinent

16 Dan Martin, *Tibskrit*, s.v., 'Manaho' (online, several URLs).

17 On Manaho, see Gyatso (2004: 90); Czaja (2007: 348); Martin (2008: 29, n.38). An analysis of this interesting text, and a comparison with Islamic ophthalmology of this period should yield interesting data for better understanding the transmission of ophthalmological knowledge.

18 Gyatso (2015: 116–17).

alongside Indian traditional medical systems. In fact, the Indian government actively promotes Unani.¹⁹ It is also practised in other parts of the world, including in the Islamic world and beyond.²⁰

Islamic medicine reached the subcontinent with the Muslim migrations and conquests of the twelfth and thirteenth centuries and became established at the Mughal court in the sixteenth century. The term *Yūnānī* is based on the Arabic word *Yūnān*, literally 'Ionia' or 'Greece', referring to the links of the foundations of *Yūnānī* in Galenic medicine as inherited and transmitted by Arab and Persian medical theory and practice. The term *Yūnānī* itself, however, only goes back to the colonial age.²¹ Before the colonial encounter, the very same medicine that is today known as 'Unani tibb' was commonly referred to in Arabic and Persian medicine simply as 'tibb' (medicine).²²

The Islamic medicine that reached India acknowledged its intellectual debt to Galen and other well-known authorities, including Hippocrates, Ibn Sīnā, and al-Rāzī.²³ The texts and traditions that highlighted Galen were but one strand of Unani tibb, albeit the one emphasised by the elite Unani discourse as well as by scholarship.²⁴ The emphasis on Galen and similarly well-known authorities eclipsed other healing traditions, for example those associated with the Greek healing god Asclepius and the Islamic folk figure of Luqman.

Some aspects of Galenic medicine, along with curious stories about Galen, came to India with Sufi saints. One such account is by Sayyid Muḥammad Ḥusaynī Bandah Nawāz Gīsūdīrāz (d. 1422), a famous Sufi saint of south India whose family came from Khurasan.²⁵ Bandah Nawāz Gīsūdīrāz learned Sanskrit in order to defeat Brahmans during religious disputations. He was known also as a proficient physician and the author of a number of books on medicine, only one of which survives. In his book of collected discourses, there are a few anecdotes that testify to his interest in the Galenic tradition. One account appears in order to demonstrate Galen's teleological vision, which was an important aspect of the acceptance of his theories into Islamic science and medicine. Bandah Nawāz Gīsūdīrāz recounts the following story:

19 The Indian Government Ministry of AYUSH – the acronym stands for Ayurveda, Yoga, Unani, Siddha, and Homoeopathy – was established in 2014 'to ensure the optimal development and propagation of AYUSH systems of health care'. See the ministry's website at <http://ayush.gov.in/> (accessed 1 June 2017).

20 Attewell (2007: 1–2).

21 Speziale (2003).

22 Attewell (2007: 10).

23 Alavi (2008). For an Urdu example, see Alavi (2008: 206).

24 Attewell (2007, Introduction, esp. 21–9).

25 The following is based on Speziale (2003: 160–1).

Galen had enquired about which miracles had been done by the prophet 'Isā [Jesus]; people answered that he had walked on water. Galen asked if the water was hot or rather cold; when people answered that it was cold, he invited people to go and be converted, because 'he was surely a prophet of God'.²⁶

As Guy Attewell and Fabrizio Speziale have shown in their work, however, one should look critically at the connections between Unani and the Greek tradition. As Attewell notes, the presentation of Unani tibb as the seamless continuation of the Greek tradition 'bears little relation to the historical realities of *tibbi* knowledge and practice'.²⁷ This necessitates considering the relation, if any, between how a tradition portrays itself versus how it is revealed historically.²⁸ Here is also another case that raises the question of why practitioners and scholars of Unani sought to emphasise their links with Galen and Greek medicine.

The formulation of 'Greek' by Indo-Muslim physicians needs to be viewed against the backdrop of their struggle regarding the status of Unani tibb and its recognition, threatened by Western positivistic attitudes towards traditional medicines.²⁹ Indeed, one sees the use of the term '[y]unani' proliferate especially in the nineteenth century, when the need for this legitimisation further increased with the establishment of the British Raj in 1858 and Indian modernists being keen to emphasise their links with European culture.³⁰

2.1 *Garcia da Orta*

Knowledge of and references to Galen also reached India via Europeans. The most notable case in point is Garcia da Orta (d. 1568), the Portuguese physician who settled in Goa and wrote what is known to be the first European text on Asian medicinal plants.³¹ Da Orta is more a case of 'importing' European knowledge to India, but one can perhaps glean some relevant information from his account on local knowledge in Goa at his time.

Da Orta reports that Galen along with Hippocrates, Aristotle, Plato, Ibn Māsawayh, Ibn Sīnā, al-Rāzī, and 'Alī b. Riḍwān were well known amongst the

26 Tr. by Speziale (2003: 161).

27 Attewell (2007: 24).

28 It is of course simplistic to brand all Unani tibb, or indeed any of the other medical traditions discussed here, as one 'tradition', but for the sake of this brief overview, this term will need to suffice.

29 Speziale (2003: 149, n.1).

30 Speziale (2005: 18).

31 On Garcia de Orta and his text, see Fontes da Costa (2015) and Brentjes (2016).

Muslim court physicians in Goa in the sixteenth century, although this has not been confirmed in any way, and as Brentjes recently argued, seems to represent more closely Da Orta's own knowledge than that he is referring to.³² As for da Orta's own knowledge as represented in his text, Galen features notably in *Colóquios*, with forty-five mentions, but his overwhelming focus is on Ibn Sīnā, who warrants 126 mentions,³³ which may well suggest that his references to Galen have been mediated by Ibn Sīnā's accounts.

3 Galen in China?

3.1 *The Case of Ibn al-Nadīm*

Another intriguing account relating to Galen in Asia is found in the account by the bookseller Ibn al-Nadīm (932–90).³⁴ Ibn al-Nadīm, a man with an usually extensive education, was a copier of books and the owner of a large bookshop in Baghdad. The bookshop appears to have been a popular meeting place for scholars.³⁵ Ibn al-Nadīm composed the *Fihrist*, a kind of catalogue of all books, lecture notebooks, and so on available in Arabic at the time. The work is not only a compendium of sorts of the knowledge of a learned Muslim in the tenth century, but also contains pieces of rare information.³⁶ The collected notes are arranged thematically into ten discourses. In the opening section, Ibn al-Nadīm discusses the alphabets of fourteen different nations and their ways of writing. It is within this section that one finds an anecdote on the transmission of Galen's summaries to China. Quoting the revered Islamic physician and philosopher al-Rāzī (d. c. 925, from Rayy near modern-day Tehran; known in the West as Rhazes),³⁷ Ibn al-Nadīm writes:

A man from China came to seek me and dwelt with me for about a year. In five months of this time he learned Arabic, both spoken and written, becoming proficient in style, as well as expert and rapid in writing. When he desired to return to his country, he said to me a month in advance: 'I am about to set forth and wish that you would dictate to me the sixteen books of Galen, so that I can write them down'. I said, 'Your time is short

32 Brentjes (2016: 127).

33 Brentjes (2016: 111).

34 Discussed by Klein-Franke and Zhu Ming (2005).

35 Sellheim and Zakeri (2012).

36 Sellheim and Zakeri (2012).

37 On al-Rāzī and the reception of Galen in his works, see Koetschet (Chapter 10) in this volume.

and the length of your stay will be sufficient for you to copy only a small part of it'. Then the young man said, 'I ask you to devote yourself to me for the length of my stay and to dictate to me as fast as you can. I will keep up with you in writing'. I proposed to some of my students that they join in this project with us, but we did not have faith in the man, until there was a chance for comparison and he showed us everything he had written. I questioned him about the matter and he said: 'We have a form of writing known as Collective, which is what you see. If we wish to write a great deal in a short time, we write it with this script. Then later on, if we wish, we transcribe it with a script which is familiar and not abbreviated'. He thought that a man who was quick in learning and understanding could not learn it in less than twenty years.³⁸

3.2 *Yuan China*

Medicine with Greek roots came to China following the establishment of the Yuan Dynasty (1271/9–1368) by Kublai Khan (r. 1260–94) via what was known as 'Islamic medicine', although the conveyers of that medical knowledge were often members of the Church of the East.³⁹ Kublai Khan, the son of an Eastern Christian mother (Sorkaktani), employed an Eastern Christian doctor as his personal physician. Rashīd al-Dīn, the court-physician turned minister of the Mongol Ilkhanid court, relates that this Christian physician was known as 'Isā the Translator'.⁴⁰ 'Isā's Chinese biography indicates that he was born in Fu-lin, the Chinese transcription of Rum, the equivalent of what the Tibetan sources referred to above called Khrom, that is, Byzantium. After a particularly successful career as Kublai Khan's personal physician, 'Isā later became a central figure in the medical establishment of Mongol China. He set up the Islamic Medical Bureau (Guanghai) in the main Mongol capital (what later became Beijing) and headed the bureau.⁴¹

During this era, we find the name of Galen, or Zhalinuxi in its Chinese form, appearing in reference to Islamic medicine, mostly in relation to *materia medica*. Such is the case of the *Huihui yaofang* (*Muslim Medicinal Recipes*).⁴² The *Huihui yaofang* was probably once a part of a general encyclopaedia or

38 Al-Nadīm, *Catalogue (Fihrist)*, 1.1, ed. and tr. Dodge (1970) 1.31.

39 Often referred to as Nestorians, but on why this term in this context should be replaced by either Church of the East or Church of Persia, see Hofrichter (2006: 11–14).

40 On Rashīd al-Dīn, see Akasoy, Burnett and Yoeli-Tlalim (2013).

41 On 'Isā / Isu'a, see Kim (2006: 41–52); Shinno (2002: 47–8); Allsen (2001: 149–51); Buell (2007: 279–95); and Tu-chien Weng (1938).

42 On Islamic medicine in the Mongol era, see Buell (2007c: 279–95). On the *Huihui yaofang*, see Buell (2007a: 138–47) and Buell (2007b: 22–35). See also Kong and Chen (1996: 85–102).

textbook on Islamic medicine written during the Mongol rule of China. It is replete with quotations from various authorities, including Zhalinuxi, although the relationship between these quotes and any Galenic writings is yet to be analysed. Key here, however, is the overall context of the references to Galen, which are within an Islamic context, a point also indicated by the form of his name as it is transcribed in Chinese – Zhalinuxi – reflecting the Arabic transliteration for Galen: Jālīnūs.

3.3 *Jesuit Medicine*

During the Ming period (1368–1644), some aspects of Galenic medicine arrived in China with the Jesuits.⁴³ During this period, Jesuit missionaries in China wrote medical treatises in Chinese based on current European medicine. It is through this Jesuit prism that one sees Galenic views flowing into China at this time. The Jesuit medical treatises of this period focused mostly on anatomy, but also on the preparation of drugs. The theme of physiology appears within the general context of Jesuit writings on Western natural philosophy. It is here that references to Galen are found. *Xinxue cushu* (*Summary Exposition of the Science of the Psyche*), by the Italian Jesuit missionary Giulio Aleni (1582–1649), is considered to have been the main vehicle for Western ideas about human physiological, anatomical, and psychological notions. Aleni describes the soul as closely associated with the nerves and discusses Galen's doctrine along with his knowledge of the nerves.⁴⁴ He also states that the maintenance of life depends on the harmonious presence of dryness, dampness, cold, and heat. In explaining the necessity of the presence of cold and dryness, reference is made to Galen's (Jialene or Jialena, 加勒訥) theory.⁴⁵

Aleni presents Galen's theory on the *pneumata*, explaining that there are three types of 'spirits': the 'natural' spirits (*tixing zhi qi*) are produced in the liver; 'vital' spirits (*shengyang zhi qi*), as well as 'inner heat', are produced in the heart; and the 'animal' spirits (*dongjue zhi qi*) are produced by the brain. The human nervous system is assessed in terms of Galen's *pneumata*.⁴⁶ In volume eight of Aleni's work, 'On Breathing', one finds a specific mention of Galen, transliterated into Chinese as Jialene (加勒訥), representing perhaps an Italian pronunciation. This Galenic theory of the three *pneumata* was

43 I would like to thank Professor Chen Ming of Peking University for his help with the preparation of this section. The following is based on Standaert (2001).

44 Standaert (2001: 791); Peterson (1973: 307–11).

45 As Peterson (1973: 308) explains, 'cold is required to prevent the body from becoming excessively hot, and similarly, dryness prevents the body from being swamped with water by keeping it at a suitable level of moisture'.

46 Peterson (1973: 309).

particularly alien to the Chinese.⁴⁷ Another Jesuit author who brought Galenic viewpoints to China was Alfonso Vagnone (1566–1640). In his *Huanyu shimo* (*Beginning and End of the World*) he describes the function of blood, *pneuma*, blood movement, and the four temperaments from a Galenic perspective.⁴⁸

Later mentions of Galen include the nineteenth-century Chinese translation of John Forbes Royle's (來拉, 1799–1858) *Manual of Materia Medica and Therapeutics: Including the Preparations of the Pharmacopoeias of London, Edinburgh, and Dublin, with Many New Medicines*. Here Galen, transliterated into Chinese as Jialun (茄倫), is mentioned in reference to aloes: 'Aloes were known to Dioscorides, to Galen, and to Celsus'. As the form of his transliterated name suggests – the European Galen having been adopted rather than a form reflecting the Arabic form Jālīnūs – Galenic input by this time had moved away from Islamic links to those based on European contacts.

4 Conclusion

An important question to address is whether Galenic medicine had any long-term impact in Asia, and if not, why? That the link to Greece features so prominently in the current Indian medical marketplace is one good argument to suggest its significance in India, even if much of the link with Greece is a late construction. With regards to China, perhaps it would be worthwhile revisiting Joseph Needham's judgement of some decades ago that Greek, Muslim, and Eastern Christian medicine in China had 'no perceptible influence'.⁴⁹ Though on the face of it, this judgment may be generally true, it is worth revisiting especially if one keeps in mind that 'influence' can take many forms and that its traces may well be concealed.

Tibetan accounts on the sources of medical knowledge in Tibet often contain mythical elements, and so while one cannot read them as straightforward historical narratives, one can, and should, take some cues from such texts.⁵⁰ These accounts can serve as pointers to strata otherwise forgotten or rewritten by later historical accounts.

Literary narratives of universal histories of knowledge like the Tibetan ones exemplify different ways of managing relationships between foreign and local knowledge and of negotiating cultural differences. The organisation of

47 Peterson (1973: 311).

48 Standaert (2001: 791).

49 Needham (1970: 17–18).

50 See Yoeli-Tlalim (forthcoming).

knowledge from and about different peoples has been a powerful tool for articulating claims of empire, uniting multiplicities of locales in harmonious singularity mirrored by a claim for comprehensiveness.⁵¹ Attention should be paid not only to straight up borrowing, but also to less evident cultural interactions, such as responses that result from contacts with foreign knowledge, where external conditions create change within, such as reformulations or reaffirmations. Much of this type of work is yet to be done.

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Medieval Portraits of Galen

Stavros Lazaris

The study of medieval portraiture as a distinct art form is a relatively new phenomenon in modern scholarship. Only in the last few decades have researchers begun to consider these images as works of art, part of a continuum of visual imagery. For the periods and cultures considered in this work, portraits, literary and visual, of real and fictional persons, held importance from physical and psychological points of view.¹ This concerns not only portraits of saintly figures and of the emperor, but also of average individuals.²

For example, the eighth-century *Adversus Constantinum Caballinum* informs us that people often painted images of their loved ones – husbands and wives, parents, and children – so as not to forget them.³ This testimony highlights the intimate relationship Byzantines developed with portraits and more generally with images. They perpetuated the Hellenistic portrait tradition, and in contrast to what some scholars have claimed,⁴ they differentiated – with the exception of the portrait of the emperor, which is in itself a unique

- 1 The verbal description of the physical and psychological characteristics of a person is done by *ekphrasis* (a descriptive speech whose goal was to make the subject visible) or *eikonosmos* (a written system of physical description that focused on the identification of individuals through physical features). Visual individualisation is accomplished by the apposition of the name next to the image, by highlighting the most significant attributes and gestures of the subject, or by a life drawing, one rendering visually the physical and psychological features as faithfully as possible. In short, the portrait is used to identify an individual, putting the subject in the best light, thanks to the precision of the descriptive vocabulary or the accuracy of the drawing and the colours used.
- 2 There is a rich literature on medieval portraiture. Apart from the references in the following pages are Velmans (1971); Spatharakis (1976); Dagron (2007); Paravicini Bagliani, Spieser, and Wirth (2007); Marsengill (2013); Touati (2015).
- 3 [John of Damascus], *Against Constantine Caballinos* (*Adversus Constantinum Caballinum*), ed. Migne (1864) 313. This does not seem to be an original work by John of Damascus, although it is usually ascribed to him in the surviving manuscripts; see Brubaker and Haldon (2001: 250–1).
- 4 See, for instance, Wladimir de Grüneisen, who is critical of medieval portraitists who, according to him, only applied increasingly simplified formulas. Not all types of portraiture, however, lend themselves to such criticism; Grüneisen (1911: 97–9).

case⁵ – individuals' portrait from those of saintly figures.⁶ For individuals, features were usually rendered with some realism, while there is a clear rejection of a mimetic representation in portraits of saintly figures.⁷ As Ernst Kitzinger explains, in some early works of the Middle Ages one can detect differences between 'the representations of Saints and 'true' portraiture'.⁸

This chapter focuses on personal portraiture – portraits of Galen, to be specific – from a diachronic and transcultural perspective based on fifteen or so painted works from Greek, Western, and Arab manuscripts as well as churches and monasteries in Italy, Greece, and Bulgaria. These works concern a scientific and medical context on the one hand and a religious one on the other. While the presence of Galen in a medical context hardly comes as a surprise, it is quite odd to find him in a sacred one. In addition to discussing the iconographic elements of the contexts in which Galen is represented, his place in medieval thought is also examined.

1 Portraits of Galen

The list in Table 31.1 is far from exhaustive, but is representative of the topic at hand, allowing a study of the iconographic choices of miniaturists and painters over more than a thousand years.⁹

5 An individual, an *idiōtikos*, who became an emperor, had to play a particular role. During the emperor's reign, he had to leave behind his physical body and face. Thus, for the Byzantines, it was of no importance if his official portrait failed to resemble his real physiognomy. No significance was attached to the recognition of the individual or to the imitation of his specific physical details. In these kinds of representations, made by Byzantines for Byzantines, the crucial point was the function of the sovereign and his monarchical reign. His insignia of imperial power – diadems, crowns, sceptres, orbs, *globus*, *akakia*, *labarum*, and so on – played an important role in this visual demonstration. On imperial portraiture in Byzantium, see, among others, Grabar (1971); Grabar (1954); Head (1982).

6 Here the reference is to representations of figures that do not evoke a specific scene or specific historical event, but simply Christ, the saints, or the Virgin.

7 See the observations in Lazaris (2009).

8 Kitzinger (1963: 187).

9 A few portraits of Galen on pharmacy pots, dating for the most part from the nineteenth century, can be viewed in Drey (1983).

TABLE 31.1 Galen's medieval portraits

No.	Painted works ^a	Iconographic topic
Greek manuscripts		
1	Vindobonensis med. gr. 1 (Österreichische Nationalbibliothek, Vienna), c. 512 Medical content	Fol. 3v: Galen, one of seven physicians
2	Bononiensis 3632, (Biblioteca Universitaria, Bologna), 15th century (codex elaborated in the 1440s in Constantinople) Medical content	Fol. 26r: Medallion with the portrait of Galen surrounded by four scholars
3	Parisinus gr. 2294, (Bibliothèque nationale de France, BnF, Paris), 15th century Medical content	Fol. 71v: Galen examining a vial containing urine
Western manuscripts (Latin, Italian, etc.)		
4	Malatestianus D.XXV.1 (Biblioteca Malatestiana, Cesena), AD 1270–80 Medical content	Seven portraits of a physician: ^b Fol. 1r: a physician and a pupil Fol. 11r: a physician takes the pulse of a patient Fol. 69r: a physician takes the pulse of a patient lying on a bed Fol. 89r: a physician takes the pulse of a patient lying on a bed Fol. 113r: a physician with a closed book Fol. 156r: a physician with a pupil Fol. 171r: a physician with a closed book
5	Parisinus lat., nouvelles acquisition 1365, (Bibliothèque nationale de France, BnF, Paris), AD 1336 Medical content	Fol. 1r: Galen teaching
6	Parisinus lat. 6823, (Bibliothèque nationale de France, BnF, Paris), first half of the 14th century Medical content	Fol. 1v: Hippocrates and Galen conversing, sitting across from each other
7	Parisinus ital. 1108, (Bibliothèque nationale de France, BnF, Paris), 15th century Medical content	Fol. 7v: Galen, one of 11 physicians

TABLE 31.1 Galen's medieval portraits (*cont.*)

No.	Painted works ^a	Iconographic topic
Arab manuscripts		
8	Parisinus ar. 2964, (Bibliothèque nationale de France, BnF, Paris), AD 1198–99 Medical content	P. 32: Galen, one of 3 physicians
9	Vindobonensis A.F.10 (Österreichische Nationalbibliothek, Vienna), middle of the 13th century Medical content	Fol. 3v: Galen, one of 9 physicians
10	Hunterianus 40 (T.1.8) (University Library, Glasgow), ^c late 17th century Medical content	Fol. 3v: Galen, one of 4 sages
Churches and monasteries		
Bulgaria (Bačkovo)		
11	Church of the Theotokos Petritzonissa (or Petritziotissa), c. 1643 (paintings)	In the refectory: the Tree of Jesse, flanked by 12 portraits of pagan sages, including Galen
Bulgaria (Arbanasi)		
12	Church of the Nativity, c. 1681 (foundation of the church)	In the narthex: the Tree of Jesse, flanked by 12 portraits of pagan sages, including Galen
Greece (Mount Athos, Lavra)		
13	Monastery of Great Lavra, c. 1512 (for the refectory) ^d	In the refectory: the Tree of Jesse, flanked by 12 portraits of pagan sages, including Galen
Italy (Anagni)		
14	Cathedral of Santa Maria d'Anagni, 13th century	In the crypt (from left to right): Galen and Hippocrates, sitting across from each other

a The manuscripts are listed by language, then chronologically, and if need be, alphabetically (by the name of the city where they are preserved). Other monuments are organised by the current country where they are preserved (the other two subcriteria will also be applied if necessary).

b With the exception of the figure on fol. 89r, every figure in this manuscript is beardless. Thus, even if there are portraits in the texts by Galen – *On the Elements According to Hippocrates*,

On the Natural Capacities, On Crises, On Affected Parts, etc. – there are no visual means of identifying these physicians.

- c The manuscript is in Karshuni, i.e. written in Arabic but using Syriac script.
- d According to David Talbot Rice (1963: 117–27), the painting of the *katholikon* dates from 1535, whereas that of the refectory is from 1512.

This list highlights the two types of contexts: the first, i.e. scientific and medical, and the second, i.e. religious. Galen appears as a significant figure in four iconographic themes individually and collectively: as author, as teacher, as doctor, and as part of an assembly of sages. The first context relates to a well-known portrait type. It is the professional portrait, a subcategory of private portraiture, which flourished throughout the Middle Ages. In this type of portrait, specific features of a person might sometimes be rendered, but what matters above all else is the socio-professional category of the figurative subject, identified by significant attributes.

2 Scientific and Medical Contexts

2.1 *Portraits of Authors*

Among the representations of professional portraits, the most widespread type is probably that of the author. It is reproduced in medieval manuscripts (Greek, Latin, Arabic, Hebrew, etc.), usually in frontispieces, and shows him mostly at work, writing on a roll or on a codex, copying a work,¹⁰ or dictating his work to a copyist. Another popular theme depicts the author presenting his work to his readership. For example, Hippocrates is reproduced in a hieratic stance presenting his work to his readers in Parisinus gr. 2144, fol. 10v.¹¹

Galen is represented in this iconographic formula in a miniature in Bononiensis gr. 3632, fol. 26r (see Book cover). He is included among various other physicians on fols 17r–26v. The miniaturist has individualised each

¹⁰ The iconography of author portraits very often merges with scribe portraits in the Middle Ages.

¹¹ Parisinus gr. 2144 dates to the fourteenth century, c. 1338. It contains works by Hippocrates and is otherwise unillustrated except for the portrait of him sitting in an armchair, his inked writing reed in his right hand and an open codex in his left. The book he holds contains the beginning of his *Aphorisms*: 'Life is brief, art is long, the crisis fleeting'. For a colour reproduction, see Lazaris (2017: fig. 32).

person. The central figure is Galen, according to the inscription above his head.¹² He is set in a medallion, holding a plant in his right hand, and surrounded by four sages enshrined in smaller medallions. The first words of his *Art of Medicine* are written on both sides of his head in a different hand from that of the manuscript's scribe. In Vindobonensis A.F.10, fol. 3v (see Figure 31.1),¹³ Galen is also represented among other physicians.¹⁴ The nine of them are, from left to right, (upper row) Philagrios, Heraclides, and Andromachus the Younger; (middle row) Marinos, Pythagoras, and Proklos; and (bottom row) Galen, Magnos of Emesa, and Andromachus the Elder. Each physician, in his own medallion, sits on a carpet, legs crossed, and leaning against a semi-circular folder. They are arranged in three rows of three, in chronological order, from right to left and top to bottom. The name of each doctor appears vertically in golden cursive script next to his corresponding image. Galen is painted in the lower left corner, drawn in profile looking up at his predecessors.

2.2 *Teaching Scenes*

The preserved representations of teachers in the East and in the West often show them sitting on a bench, their index finger pointing towards an assembled or imaginary audience. One example, in Baroccianus 87 at the Bodleian Library, Oxford, features John Argyropoulos, or perhaps Aristotle.¹⁵ On fol. 33v, inserted and pasted on a half folio, a figure sits in front of a rich, architectonic background, and behind the portrait is written 'John didaskalos Argyropoulos'. Similarly, in Casanatensis (Rome) 1382, fol. 3r, Roland of Parma lectures from his own book to students.¹⁶ In Istanbul, Topkapı Palace Library, Ahmet III, no. 2127, fol. 2v, Dioscorides, the author of the treatise in the manuscript, is depicted talking about mandrake with a student.¹⁷

12 The inscription is by another hand, in black ink, above another in red, where one reads 'Hippocrates', who is represented on fol. 25v of this codex.

13 Reproduction in Vallet (2013: 310).

14 In contrast to what one might have thought, this is not an assembly of physicians because they are separated from each other and do not interact. Except for Galen, they are all represented face-to-face and inscribed in a medallion each holding a book.

15 Some scholars believe the image to be a portrait of John Argyropoulos, teacher at the Katholikon Mouseion of the Kral *xenon* annexed to the monastery of St John the Baptist (Mondrain 2004: 277), while others think it is Aristotle (Spatharakis 1976: 259). According to Mondrain, Demetrios Angelos, a colleague of Andronikos Eparchos, who followed Argyropoulos' teachings in Constantinople, produced the portrait. On John Argyropoulos, see Bouras-Vallianatos (Chapter 4) and Degni (Chapter 6) in this volume.

16 Jones (1998: fig. 10).

17 Hoffman (1993: fig. 9).

Galen is shown teaching in Parisinus lat., nouvelles acquisition 1365, fol. 1r. The manuscript contains *On the Composition of Drugs According to Places*, translated by Niccolò da Reggio, physician of Robert of Anjou, king of Naples.¹⁸ In this image, contained in a historiated initial, Galen holds a urine vial in his left hand and has his right hand positioned on an open book. He is addressing an audience of students assembled in rows. Those in the first two rows are seated with open books before them. Finally, in Parisinus ar. 2964, page 32, (see Figure 31.2), Galen is represented teaching a student. He appears with two other physicians: (from left to right) Aflaguras, Magnos of Emesa, and Galen himself.¹⁹ He sits in front of the student, who holds an open book in both hands. A brief phrase is written in Arabic – *qara'a kitāban 'alā* ('studying under someone's supervision') – which means literally 'he reads a book in front (of someone)'. In the image on the right, this is exactly what the student, to the left, is doing.

2.3 Consultation Scenes

There are several representations of consulting physicians, both eponymous and anonymous, at work, performing such duties as taking a patient's pulse, checking urine, writing a prescription. Among the known Greek manuscripts are Parisinus gr. 36 (fol. 187v),²⁰ Parisinus gr. 2200 (fol. 159r),²¹ Parisinus gr. 2243 (fol. 10v),²² and Vaticanus Pal. gr. 199 (fol. 191v).²³ Among the many Latin manuscripts, Vindobonensis 93 contains several representations of consulting physicians, for example, on fols 6v–8r.

Galen is shown consulting with patients in Malatestianus D.xxv.1 and Parisinus gr. 2294. In the former, the only such representation that might be of Galen, on fol. 89r, displays a bearded figure taking the pulse of a bedridden patient. In the latter manuscript, on fol. 71v (see Figure 31.3), Galen examines urine. Physicians examining urine is a common iconographic theme

18 Malatestianus D.xxv.1, fols 1r and 156r, also contains two portraits of teachers, but there is no way to accurately determine if Galen is one of them. For a further teaching scene, see Dresden, Sächsische Landesbibliothek, Db 93, fol. 608v. On the miniatures of this manuscript, see Nutton (2011). On Niccolò da Reggio, see Urso (Chapter 19) in this volume.

19 As they are not shown conversing, the image cannot be grouped with the iconographic topos of the assembly of wise men (see also Section 2.4, below). Reproduction at <http://mandragore.bnf.fr/> (accessed 11 April 2018); Merisalo (2013: 352). Facsimile, Menghini and Contin (2009).

20 Reproduction in Imbault-Huart, Dubief, and Merlette (1983: 66–7, no. 21).

21 Reproduction in Imbault-Huart, Dubief, and Merlette (1983: 68–9, no. 22).

22 Reproduction in Lazaris (2017: fig. 32).

23 See Vatican Library, DigiVatLib, at <https://digi.vatlib.it> (accessed 11 April 2018).

throughout the Middle Ages.²⁴ Uroscopy, based on the visual examination of the colour of the urine, was considered to be an efficient diagnostic method.

2.4 *Assembly of Sages and Scenes of Colleagues Interacting*

The assembly of sages is a well-attested iconographic theme going back to classical antiquity.²⁵ One of the most famous examples is a first-century floor mosaic from Torre Annunziata, now in the Museo Nazionale, Naples.²⁶ The so-called *Anatomy Lesson* in the Via Latina Catacomb in Rome is also noteworthy. This well-known fresco shows a group of six seated men, dressed in tunics and pallia, who frame a seventh, markedly larger figure, with a second row of heads in the background, suggesting an attending audience. The second figure from the right points with a long wand towards what appears to be a corpse in the foreground.²⁷

In Vaticanus Palat. lat. 1564, from the second quarter of the ninth century, an assembly of nine figures on fols 2r and 3r resembles those found in Vindobonensis med. gr. 1, fols 2v and 3v.²⁸ On fol. 3v (see Figure 31.4), Galen is depicted in the company of other physicians in a composition clearly inspired by the iconography of the seven sages. Galen is depicted at the centre of the upper row, sitting in an armchair, somewhat separated from his colleagues, who are seated on stone plinths or rocks. Crateuas sits on his right and Dioscorides to his left. In the middle section are Apollonius Mys and Nicander of Colophon, offering a plant to a snake. Andreas and Rufus of Ephesus appear in the lower section. The composition consists of individual portraits, independent of each other.

Galen appears surrounded by scholars in several other manuscripts. In Parisinus ital. 1108, fol. 7v (see Figure 31.5),²⁹ he is accompanied by ten physicians (from left to right, upper row) Asclepius, Hippocrates, Avicenna, Rhazes, Aristotle; (middle row) Serapion of Alexandria and Galen; (lower row) Mesue,

24 See Zglinicki (1982).

25 On the iconography of the seven sages, see Elderkin (1935). On the theological oracles attributed to the seven pagan sages, see Delatte (1923); Busine (2016).

26 The mosaic shows seven bearded men in classical garments seated or standing in a roughly semi-circular formation in front of a landscape background. The same composition survives in a later mosaic in the Villa Albani in Rome. Another floor mosaic, excavated at Apamea, Syria, and attributed to the late fourth century, shows a group of seven seated men in classical dress; Lacoste (1941: figs. 1 and 10).

27 This fresco and its central figure have been interpreted differently. See also Grmek and Gourevitch (1998: 193–5).

28 Lazaris (2013: figs. 10–11).

29 Reproduction in Sournia and Gourdon (1982: 33, no. 4); Imbault-Huart, Dubief, and Merlette (1983: 42–3).

Dioscorides, Albertus Magnus, and Macer. In Parisinus lat. 6823, fol. 1v (see Figure 31.6),³⁰ Galen is depicted opposite Hippocrates. He holds an open book, Constantine the African's translation of Galen's *Commentary On Hippocrates' Aphorisms*, of which the beginning can be read. To the right, Galen presents a scroll, the first sentence of which can be read: 'Intendo enim manducare ut vivam, alii intendunt vivere ut manducent' ('I mean to eat to live, while others live to eat'). The two physicians are identified by the opening words of their works as well as by labels bearing their names. Their physical traits are distinctly rendered, but could not ensure accurate identification without the mention of their names. In the well-known Arabic manuscript Hunterianus 40, fol. 3v (see Figure 31.7), a portrait of Galen depicts him in the company of three sages. Their names are written alongside them and overhead in Syriac characters: (from right to left) Aristotle, Galen, and Pluto. A fourth figure, labelled 'this is Ḥayqār Ḥakīm', can be identified as Aḥiqar (Ḥayqār in Arabic), the legendary wise counsellor of Sennacherib, the king of Assyria.³¹

3 Religious Context: Assembly of Sages and Scenes of Colleagues Interacting

Galen, accompanied by other sages, also appears on murals in the crypt of the Anagni Cathedral in Italy and various monasteries and churches in Bulgaria and Greece. Among the many murals in the Anagni crypt, is a representation of Hippocrates, with a raised finger, addressing Galen, who is seated to his right (see Figure 31.8).³² They are readily identified by their names, inscribed above their heads. The two fathers of Western medicine are part of an iconographic programme on the walls and vaults of the first two western bays portraying the place of man in the universe. Elucidation of the main elements of this iconographic ensemble helps in better understanding the two men's place here.

A fascinating diagram to the left of the painting of Galen and Hippocrates consists of two sets of vertical rows of circles, four on the left, six on the right. The four circles on the left refer to the Four Elements, from top to bottom, 'Ignis, Aer, Aqua, and Terra', each accompanied by a number 'xxvii, xviii, xii, and viii', respectively. In the circles on the right are the Primordial Qualities, from top to bottom, 'Acutus, Subtilis, Mobilis, Obtusa, Corpulenta, and Immobilis'.

30 Reproduction in Sournia and Gourdon (1982: 32, no. 3); Imbault-Huart, Dubief, and Merlette (1983: 40–1).

31 See Baldwin (1983).

32 On the cathedral's murals, see Smith (1965); Giammaria (2001); Cappelletti (2002).

Straight lines link each element to the three qualities that distinguish it from the others, and curved lines join the opposite qualities.³³ Pietro Toesca recognised in this diagram the influence of Plato's *Timaeus* from the translation by Calcidius.³⁴ The Four Ages of Man are also represented on the vault, with appropriate humours, inscriptions relating to the four seasons, connected to the relevant elements. A diagram on a pilaster below depicts the numerical values of the Four Humours, interrelated by sympathies and contraries as explained in Calcidius' commentary on the *Timaeus*. Léon Pressouyre notes that the Platonic theory of the Four Elements is found in many other writings of the Middle Ages and has been graphically represented in various ways. According to him, to understand the symbolic meaning of these numbers, one should look to Boethius' *De institutione arithmetica* rather than *Timaeus*, as Boethius' manuscripts contain many diagrams similar to the Anagni diagram.³⁵

Concerning the portraits of Hippocrates and Galen, Toesca suggests that their presence in the Anagni cycle indicates a medical treatise as a possible source. In contrast, according to Pressouyre, the diagram of the Four Elements does not reflect borrowing from the writings of Hippocrates and Galen. Jacques Jouanna, also interested in the representation of these two physicians and their connection to the other scientific figures of Anagni,³⁶ believes that the relationship between the different images described here is tenuous, and the two portraits refer to medical theories whose foundation is the Hippocratic treatise *On the Nature of Man*, attributed by Galen to Hippocrates.³⁷ His reasoning convincingly explains the presence of these two physicians in this iconographic cycle. Nevertheless, there has been little interest so far in determining why these pagan men were selected for depiction in a sacred context. The answer might be in murals in Greece and Bulgaria where Galen also appears.

Indeed, one finds Galen represented with other sages in a variant of the iconographic theme of the Tree of Jesse in Bulgaria and in Greece.³⁸ The Tree of Jesse is a Christian visual rendering of a passage from Isaiah 11.1: 'And there shall come forth a rod out of the stem of Jesse, and a branch shall grow out of his roots' (*Et egredietur virga de radice Iesse et flos de radice eius ascendet*). It is a metaphorical image of the genealogy of Christ consisting of a tree springing

33 Pressouyre (1966: 562).

34 Toesca (1902: 127). See also Augustine of Hippo, *The City of God* (*De civitate Dei*), 8.15, for Plato on the Four Elements.

35 Pressouyre (1966).

36 Jouanna (2006).

37 It is now known that the text was not by Hippocrates, but by his disciple Polibius.

38 The theme of the pagan philosophers is found on other monuments independently of the Tree of Jesse, but Galen does not figure in these representations.

from the body of Jesse, the father of King David, with the generations of David's lineage depicted in its branches and crowned at the top by the figure of Christ.

In the versions of the Tree of Jesse that include the assembly of pagan sages,³⁹ the sages are not part of the stem or the branches of the tree. Rather, they flank Jesse's body beneath the roots. They are visually related to the tree, but are not part of it, probably because they have no function in the genealogy of Christ. Most of these pagan sages had a direct or indirect impact on Christian thought throughout the Middle Ages, and this has been acknowledged in texts. However, one must wait until the sixteenth century and the contemporary wave of humanism in order to see these same sages visually represented in a religious context, along with other forms of wisdom, such as the father of medicine, Galen.⁴⁰ While this iconographic variant with sages is well known in different regions of Greece and in the Balkans,⁴¹ Galen appears only in three monuments on Mount Athos and in Bačkovó and Arbanasi.

In the refectory of the Monastery of the Great Lavra on Mount Athos, the Tree of Jesse features twelve sages from pagan antiquity on either side of Jesse. They are identified by inscriptions of their names on both sides of their head and by the text on a scroll that each one holds: (from left to right) Philo, Cleanthes, Solon, Dialid,⁴² Pythagoras, Socrates, [Jesse], Homer, Aristotle, Galen,⁴³ Sibyl, Plato, Plutarch (see Figure 31.9).⁴⁴ The north wall of the narthex of the Monastery of Dochiariou on Mount Athos was probably painted according to the same iconographic theme of the Tree of Jesse at the Lavra, but the sages are no longer to be found. In fact, as Grigore Nandriş writes, the wall, under the sleeping Jesse, was whitewashed. It is therefore quite possible that the Greek philosophers are under the white paint.⁴⁵ The paintings of the church date back to 1568 and were tampered in 1842.

39 On the iconographic theme of the Tree of Jesse, see Henry (1929); Taylor (1980–1; for the version with pagan philosophers, see pp. 125 and 135–8).

40 The dialectic discourse between theology and medicine regarding Christ's function as a healer is extremely complex and vast.

41 See for example Spetsieris (1963–4); Nandriş (1970); Dujčev (1971; 1976; 1978); Lampsides (1973); Taylor (1980–1); and Mylona and Papagelos (2006).

42 According to Nandriş (1964: 272), it is Euripides. Spetsieris (1963–4: 6, 57, 59–61) thinks it is a female figure. According to Achimastou-Potamianou (1982), it is Aithalides.

43 Nandriş (1964: 271; 1970: 16) following Henry (1929: 25), reads 'Palinos', but the inscription is clearly 'GALĒNOS'. According to Nandriş, this refers to Apollonios, the figure who appears 'in various interpretations of the iconographical theme of the tree of Jesse'.

44 See a description and reproduction of the various figures in Mylona and Papagelos (2006). For a reproduction of the entire scene, see Millet (1927: pl. 151, 3); Taylor (1980–1: figs. 19 and 20).

45 Nandriş (1964: 274).

Galen is represented in the same way in the Bulgarian Church of the Theotokos Petritzonissa (or Petritziotissa), located near modern Bačkov, south of Plovdiv. It was founded in 1083 by Gregory Pakourianos, a Byzantine general of Armeno-Georgian ancestry, according to his typikon (written in both Greek and Georgian).⁴⁶ The church, built between 1074 and 1083, was restored in 1604 and 1623, and the refectory was painted in 1643.⁴⁷ The Tree of Jesse is flanked by twelve portraits of sages identified by inscriptions of their names and by the text on their scrolls: (from left to right) Aristophanes, Odoneristos, Diogenes, Ariklos, Kleomian, Socrates, [Jesse], Hokyaros, Aristotle, Galen, Sibyl, Plato, and Plutarch (see Figure 31.10).⁴⁸ According to Konstantinos Spetsieris, it is likely that the iconographic cycle existed from the beginning of the foundation of the refectory.⁴⁹

In Arbanasi, near the ancient capital of Tarnovo, in the Church of the Nativity, founded in 1681, one also finds on the north wall of the narthex an image of the Tree of Jesse flanked by twelve pagan sages identified by inscriptions of their names and by the text on the scrolls they hold: (from left to right) Lisitis, Astakor, Solon, Zialigis,⁵⁰ Pythagoras, Socrates, [Jesse], Homer, Aristotle, Galen, Sibyl, Plato, and Plutarch (see Figure 31.11).⁵¹

The iconographical motif of the Tree of Jesse with pagan philosophers is found in several other places,⁵² but as stated, Galen does not appear anywhere else. It is, however, notable that the tree's absence from Moldovan monuments is strange, because as Paul Henry writes, the iconographic programme of Lavra is exactly the same as in Moldova.⁵³ That said, when it comes to the Lavra

46 The text has been edited by Gautier (1984).

47 On the church and its treasures, particularly its manuscripts, see Zacharos (1998).

48 For illustrations of these paintings, see Dujčev (1978: 70–97). Spetsieris (1963–4: 420–1), following Apostolidis (1936), only lists four figures: Socrates, Plato, Pythagoras, Aristotle. According to Apostolidis, these representations were extant during his visit in 1927, but during another visit, in 1933, the two philosophers were gone, as the wall had been opened with two windows in that very spot, and two other sages were transformed into Euthymios of Tarnovo and St John of Riga, with inscriptions in Bulgarian. According to Dujčev (1971), six new figures were discovered after restoration work in 1966 in the monastery's refectory.

49 Spetsieris (1963–4: 421).

50 According to Achimastou-Potamianou, this figure is the same as the one named Dialid at the monastery of Lavra (see above, n.41 and Achimastou-Potamianou, 1972: 76).

51 For illustrations of these paintings, see Dujčev (1978: 98–125). For an illustration of the entire scene, see Grabar (1928: pl. LIII).

52 See the full list in Spetsieris (1963–4). At least fifteen churches and monasteries in Greece have representations of sages (Aristotle, Solon, Thucydides, Plato, Sibyl, etc.) (Mylona, Papangelos, 2006: 251).

53 Henry (1929: 24).

and the painted churches in Bukovina, there is a divergence of opinions regarding who influenced whom.⁵⁴

Several researchers have tried to explain the presence of the pagan philosophers in sacred places. Nikolaos Bees argues that it stems from ancient theosophy,⁵⁵ based on his examination of the inscriptions on the scrolls held by the sages, whose texts are found in Dionysios of Fournas's *Manual of Iconography*.⁵⁶ According to this text, the representation of the Tree of Jesse depicts 'below the prophets, on either side of Jesse, the wise men of the Greeks and the soothsayer Balaam, who hold their texts and look upward pointing out the nativity of Christ'.⁵⁷ In the chapter 'The wise men of the Greeks, and their sayings concerning the form of the incarnation', Dionysios lists the wise men – Apollonius, Solon, Thucydides, Plutarch, Plato, Aristotle, Philo, Sophocles, Thales, Balaam, Sibyl – and what should be quoted on the scrolls they hold.⁵⁸

A few years after Bees' study, Anton von Premerstein pointed out that the text on the inscriptions differs from one representation to another and that the figures are not always the same.⁵⁹ One cannot therefore rely on the sole evidence of the *Manual of Iconography* to explain this visual theme. For Ioan Ștefănescu, the iconographic theme of the pagan philosophers can be explained by differing interpretations from various sources. A Romanian manuscript of the eighteenth century was the basis for the interpretations found in Valachia and Moldova. In this manuscript, one finds the iconographic types of philosophers and the full inscriptions that the scrolls contained.⁶⁰ It reproduces the Greek interpretations and relates to the *Manual of Iconography* of Dionysios of Fournas. Ștefănescu explains that this iconographic theme was related to messianic prophecies and the Tree of Jesse.⁶¹

As Gerakina Mylona and Ioakeim Papaggelos wrote: 'The direct correlation between apocryphal texts and these portraits is confirmed in an inscription at Philanthropenon Monastery which attributes the presence of the portraits to

54 For Henry (1924; 1929; 1930), the Athonite paintings influenced the frescoes found in Bukovinian churches, whereas Nandriș (1964; 1970) thought the opposite.

55 Bees (1923: 117–19).

56 Dionysios of Fournas, *Manual of Iconography*, ed. Papadopoulos-Kerameus (1909) 82–4. See also the commentary of Didron and Durand (1845: 148–54).

57 Dionysios of Fournas, *Manual of Iconography*, ed. Papadopoulos-Kerameus (1909): 84.

58 Dionysios of Fournas, *Manual of Iconography*, ed. Papadopoulos-Kerameus (1909): 82–4.

59 Premerstein (1926: 647–65).

60 Ștefănescu (1929: 162).

61 Ștefănescu (1929: 163).

the text of the *Prophecy of the Seven Sages*.⁶² According to the four variations of the *Prophecy*, six or seven wise men met in 'an Athenian temple' to find out their future and the meaning of the phrase 'to a God unknown'. It is worth noting that these wise men do not correspond to the established group of the seven wise men of antiquity. The wise men mentioned in the four versions of the *Prophecy* are: Aristotle, Thucydides, Plutarch, Menander, Bias, Solon, Chilo or Philo, Tito, Apollonius, Plato.⁶³

There is a near total consensus among scholars that pagan philosophers should be understood as announcers of the Christian religion. Michael Taylor states that the wise men have been included because they are prophets of 'distinctively Christian events'.⁶⁴ According to Nandriş, the theme of the Tree of Jesse was associated with figures symbolising the prophecy of the incarnation of Christ before his birth and the identity of the divine logos before and after his incarnation.⁶⁵ For Nadezhda Amudzhieva and Pavel Tsvetkov the depiction of ancient philosophers 'with halos in many of those paintings puts them on an equal footing with the saints'.⁶⁶ This idea, however seductive, is problematic. In the same way that certain pagan scientific and medical texts were used to serve the new religion from the very first centuries of the Christian era,⁶⁷ some pagan philosophers were appropriated in a totally new context and transformed into annunciators of Christianity. As pointed out by Adolphe Napoléon Didron, here pagan geniuses are paying tribute to the Christian truth.⁶⁸ In doing so, they were certainly not on an equal footing with the saints (let alone Christ and the Virgin). It is therefore not a question of equity, but of subordination, as Vivian Nutton writes, explaining that these representations illustrate the place of medicine in Byzantine society as subordinate to theology.⁶⁹

To illustrate this point, one only has to look for an example to the miniature in Parisinus gr. 2243, fol. 10v, where in the upper section Christ is blessing, whilst the Holy Spirit hovers above him. He is flanked on his right by the Virgin

62 The *Prophecy* is a compilation of texts usually attributed to Apollonius, similar and at times identical to the texts found on the philosophers' scrolls. They proclaim the tri-substantial nature of God, the incarnation of the Logos, and the purity of the Virgin.

63 Mylona and Papaggelos (2006: 262).

64 Taylor (1980–1: 136). On this subject, see also Grecu (1924: 27ff).

65 Nandriş (1964: 269).

66 Amudzhieva and Tsvetkov (2013: 359).

67 On this phenomenon, see Lazaris (2016).

68 Didron and Durand (1845: 151).

69 Nutton (1984: 1).

Mary and on his left by John the Precursor, then the archangels Michael and Gabriel.⁷⁰ The lower section is a medical consultation scene.⁷¹ These two adjacent scenes emphasise the link between the care of the body and that of the soul, placing the action of the doctor under the blessing of Christ. To be healed, the patient must be treated by a doctor, but he is more likely to heal if he requests the Virgin and St John the Baptist to intercede with Christ on his behalf.

Thus, more than an assembly of sages, the pagan philosophers are here presented as annunciators of Christianity, but subordinates to Christ and the Saints. Just as certain pagan texts deemed useful were reclaimed by Christians, like the classical *paideia* that served as a *propaideia* to Christianity, in the same fashion and in a similarly subordinate positioning, the most representative pagan sages were represented in Christian holy contexts within an iconographic theme, the Tree of Jesse. Thus, it was appropriate to represent Galen and the other pagan sages in sacred places. They were above the fray because, as written in Hunterianus 40, just above the portraits of Aristotle, Galen, Pluto and Aḫiqar, 'These are the wise who know God, but He [God] is the wise healer'. This sentence alone sums up the spirit and the conditions under which it was appropriate for certain pagan sages to be represented in a religious context.

For Nandriş 'the presence of Greek philosophers, tragedians, poets, historians in neo-Byzantine painting witnesses a humanist resurrection in the culture of Eastern Europe'.⁷² Toesca, who established a link between these paintings and the general cultural renewal under the Holy Roman Emperor Frederick II (1194–1250), thought the same about the frescoes of Anagni. Frederick II had made the teaching of the doctrines of Hippocrates and Galen compulsory for practical and theoretical medicine throughout his Italian

70 Reproduction in Lazaris (2017: fig. 32).

71 A physician (*ho iētros* [sic]), propped in his chair examines urine samples according to a conventional scheme of representation, both in the Byzantine world and in the West. The physician's assistant is shown wearing a conical hat and handling a container used to transport the urine sample. A pharmacist (*ho spesialos* [sic], i.e. the *speciarus*), who also wears a conical hat, brings a half-open box containing various vials. A small male figure, seated beneath a wall cupboard filled with different shaped vessels, prepares medicine by using two sticks to grind ingredients in a pot. One of the physician's patients (*ho asthenōn* [sic]) leans on two canes while seated, another stands before him in the clinic, and a seated woman tearing out her hair holds a lifeless child.

72 Nandriş (1970: 21). Nandriş (1970: 25) even states, 'The Greek philosophers introduce Plato's teaching and methods brought by Aristotle into the religious thinking of scholasticism. By so including Greek philosophy in the theological thinking of 16th-century Moldavia, medieval scholasticism, as represented in the West by Thomas Aquinas, Albert the Great and Duns Scotus, entered indirectly into Eastern spiritual life'.

kingdom. It is probable that cultural effervescence facilitated the introduction of pagan elements into sacred places, but they were nonetheless subordinate to Christianity.

4 Conclusion

This first diachronic and transcultural study reinforces what is known about Galen's prominent place throughout the Middle Ages in the West and in the East. Moreover, the examination of his representations reveals that the visual characterisation of Galen was never subject to a constant and coherent transmission. As a result, no definitive iconographic medieval portrait of him evolved.

As mentioned above, a medieval portrait consisted of either a life drawing or a labelled representation of a person or a figure in which the character's most significant attributes and gestures were highlighted. Galen's portraits can only be identified by means of inscription alone. Attributes and gestures in preserved images cannot be considered, as they could apply to any physician. One must exclude physical features as a means of identification, because no written description or pictorial representation of the physician existed from his lifetime. Moreover, in the figures that have survived the centuries and identify Galen by inscription, the physical features, except for a beard, are not identical, which means no typology of his physical appearance existed.

Unlike portraits of other pagan philosophers, however, those of Galen always present him as a serious and respectable sage.⁷³ This reveals the true purpose of miniaturists and painters in the West and in the East, who preferred to promote the excellence of his work rather than the individual. They represent an idea(l) rather than a figure, and his portraits in church paintings were created in recognition of the significance of his activities as well as his moral qualities.

Acknowledgements

I am grateful to Robert Alessi and Alexander G. Mitchell for their comments and observations.

73 See a counterexample in Charalabopoulos (2007).



FIGURE 31.1 Vindobonensis A.F.10, fol. 3v



FIGURE 31.2 Parisinus ar. 2964, page 32

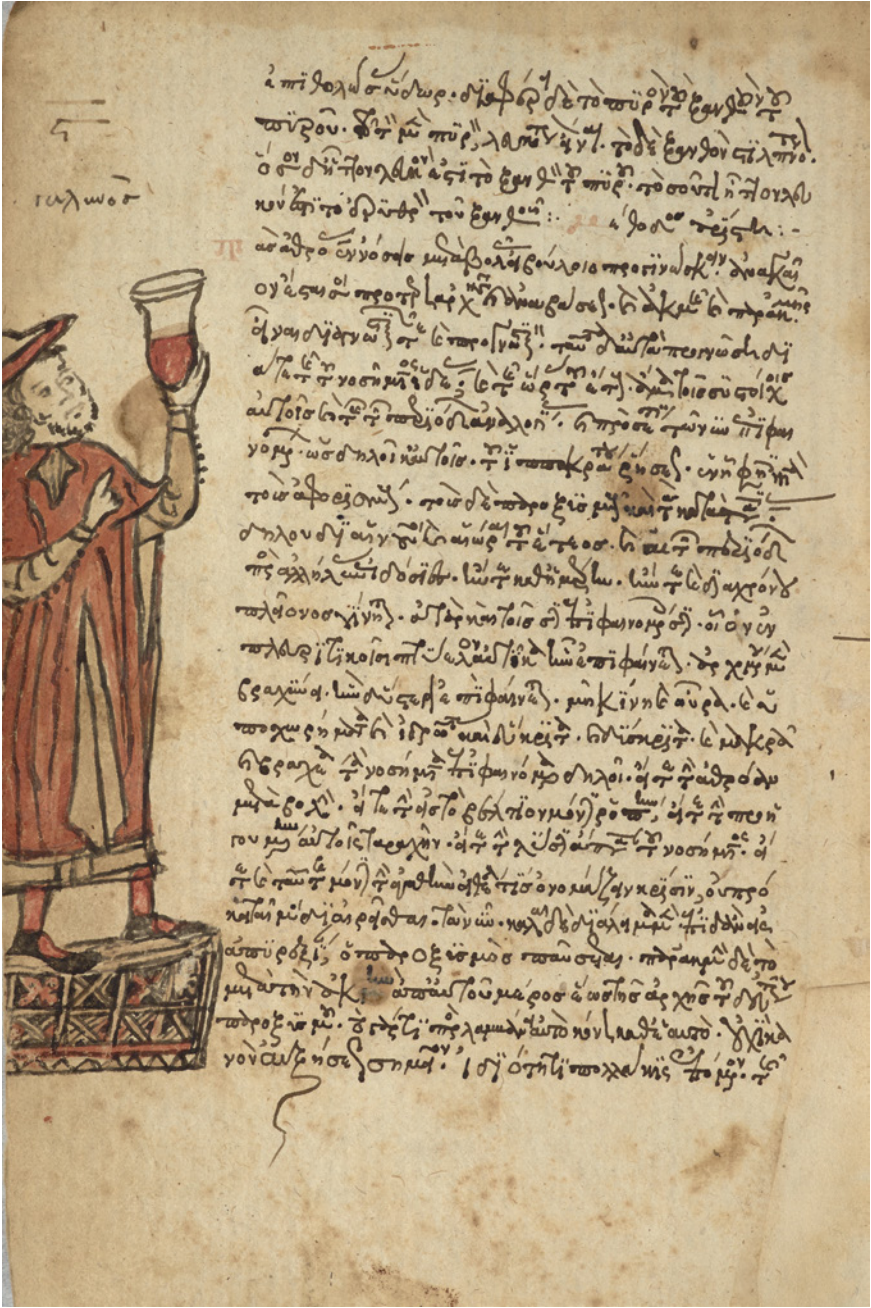


FIGURE 31.3 Parisinus gr. 2294, fol. 71v



FIGURE 31.4 Vindobonensis med. gr. 1, fol. 3v



FIGURE 31.5 Parisinus ital. 1108, fol. 7v



FIGURE 31.6 Parisinus lat. 6823, fol. 1v



FIGURE 31.7 Hunterianus 40, fol. 3v



FIGURE 31.8 Cathedral of Santa Maria d'Anagni, Anagni, Italy



FIGURE 31.9
Monastery of Great Lavra, Mount Athos,
Greece



FIGURE 31.10 Church of the Theotokos Petritzonissa, Bačkov, Bulgaria



FIGURE 31.11 Church of the Nativity, Arbanasi, Bulgaria

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